CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF PRELIMINARY DESIGNS, DETAILED DESIGNS, SAFEGUARDS DOCUMENTS AND TENDER DOCUMENTS AND CONSTRUCTION SUPERVISION OF SECOND BARICHO – KAKUYUNI WATER PIPELINE AND TRANSMISSION PIPELINES TO KILIFI AND GANDA TANKS

CONTRACT No.: KE-CWSB-102977-CS-QCBS

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT COMPREHENSIVE PROJECT REPORT FOR THE PROPOSED LOT 1 – SECOND BARICHO-KAKUYUNI RISING MAIN

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ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT COMPREHENSIVE PROJECT REPORT

FOR THE PROPOSED WATER SUPPLY PROJECT LOT 1 – SECOND BARICHO-KAKUYUNI RISING MAIN

Final Report

RECORDS FOR REVISION

VER.:	DATE:	DESCRIPTION:	PREPARED BY:	CHECKED BY:	APPROVED BY:
Draft	July, 2021	ESIA CPR Report	L.W.M	Godwin Sakwa	
Draft 1.1	October 2021	ESIA CPR Report	L.W.M	Godwin Sakwa	
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Final Report	March 2022	ESIA CPR Report	L.W.M	Godwin Sakwa	

SUBMISSION DETAILS

Certificate of Declaration and Document Authentication

This document has been prepared in accordance with the Environmental Management and Coordination Act 2015 and Environmental Impact Assessment and Audit Regulations, 2019

This report is prepared for and on behalf of:

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DISCLAIMER:

This Environmental Impact Assessment Comprehensive Project Report is based on literature review and findings from field assessment. It is however, subject to conditions in the Environmental Management and Coordination Act 2015 Environmental Impact Assessment and Audit Regulations, 2019 and World Bank Environmental and Social Safeguards

FACT SHEET

Program Name	Water and Sanitation Development Project (WSDP)
Assignment Name	Consultancy Services for Feasibility Study, Preparation of Preliminary Designs, Detailed Designs, Safeguards Documents and Tender Documents and Construction Supervision of Second Baricho – Kakuyuni Water Pipeline and Transmission Pipelines to Kilifi and Ganda Tanks
ESIA Report	Comprehensive Project report for the Proposed LOT 1 – Second Baricho Kakuyuni Rising Main
Client	Coast Water Works Development Agency
Project Scope	• Installation of additional Electromechanical works at the Baricho water works – installation of additional new pumps, surge vessels and associated electrical works; • Laying of a water pipeline rising main from Baricho water works to the proposed Kakuyuni 5,000m^3 reservoir. The pipeline will be of diameter DN 800mm, steel pipeline, 29km and will be laid mainly along the road reserve of C103; • Construction of a new reinforced concrete water reservoir of capacity 5,000m^3 at Kakuyuni. The reservoir will be sited next to the existing water tank and the proposed site belong to Kakuyuni Boys Secondary school • Rehabilitation of existing system – replacement of non-functional air valves and associated fittings along the existing DN 600mm rising main pipeline; and • Construction of a school library at Kakuyuni Boys High school as a CSR activity.
Project Location	Lango Baya Sub-County Kilifi County
Target beneficiaries	Towns of Malindi, Kilifi, Watamu and Gongoni and their surrounding environ including communities along the Pipeline route within Lango Baya, Kakoneni, Jilore and Kakuyuni centers.
Lead Expert	Godwin Sakwa Reg. No. 2492
Associate Experts	Lydiah Mbogo – 6007
Sociologist	Mercy Makadu

ABBREVIATIONS & ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
ARVs	Antiretroviral drugs
CBO	Community Based Organization
CESMMP	Construction Environmental and Social Management and Monitoring Plan
CIDP	County Integrated Development Plan
COVID	Coronavirus Disease
CPP	Consultation and Public participation
CPR	Comprehensive Project Report
COC	Code of Conduct
CSO	Civil Society Organization
CSR	Corporate Social Responsibility
dBA	Decibel Amplitude
DN	Diameter nominal
CWWDA	Coast Water Works Development Agency
DN	Nominal Diameter
DCC	Deputy County Commissioner
EA	Environmental Assessment
EHS	Environmental Health and Safety
EIA	Environmental Impacts Assessment
EMCA	Environmental Management and Coordination Act
EMMP	Environmental Management & Monitoring Plan
EOC	Emergency Operations Coordinator
ERP	Emergency Response Plan
E&S	Environmental and Social
ESAs	Environmental Sensitive Areas
ESMMP	Environmental and Social Management and Monitoring Plan
ESIA	Environmental and Social Impact Assessment
FGDs	Focus Group Discussions

GBV	Gender Based Violence
GoK	Government of Kenya
GO	Grievance Officer
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
HDPE	High Density Poly Ethylene
HIV	Human Immunodeficiency Virus
HLPs	High Lift Pumps
HSP	Health and Safety Plan
ICT	Information and Communication Technology
IEC	Information Education Communication
IFC	International Finance Corporation
ILO	International Labour Organization
JV	Joint Venture
KENHA	Kenya National Highways Authority
KENPHIA	Kenya Population-based HIV Impact Assessment
KeRRA	Kenya Rural Roads Authority
KIMAWASCO	Kilifi-Mariakani Water and Sewerage Company
KNBS	Kenya National Bureau of Statistics
KPLC	Kenya Power and Lighting Company
KURA	Kenya Urban Roads Authority
LLPs	Low Lift Pumps
MAWASCO	Malindi Water and Sewerage Company
MCA	Member of County Assembly
MoH	Ministry of Health
MoU	Memorandum of Understanding
NEMA	National Environment Management Authority
NGAO	National Government Administration Officers
NGO	Non-Governmental Organization

NEP	National Environment Policy
NMK	National Museums of Kenya
NRW	Non-Revenue Water
OP	Operating Procedures
OSHA	Occupational Safety and Health Act
PAPs	Project Affected Persons
PLHIV	Persons living with human immunodeficiency virus
PPEs	Personal Protective Equipment
PSEA	Prevention Against Sexual Exploitation and Abuse
RAP	Resettlement Action Plan
RE	Resident Engineer
SARI/SGAP/GATH	Project Consultant
SDG	Sustainable Development Goals
SEA	Sexual exploitation and Abuse
SH	Sexual Harassment
SOP	Standard Operating Procedure
STDs	Sexually Transmitted Diseases
TV	Television
UNSDG	United Nations Sustainable Development Group
VCT	Voluntary Center for Testing
WASREB	Water Services Regulatory Board
WB	World Bank
WHO	World Health Organization
WIBA	Work Injuries and Benefit Act
WRA	Water Resources Authority
WSDP	Water and Sanitation Development Project
WSP	Water Services Providers

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EXECUTIVE SUMMARY

E-1 Background

Coast Water Works Development Agency under the Water and Sanitation Development Project (WSDP) financed by the Government of Kenya and the World Bank intends to implement the proposed water supply project under LOT 1. The LOT 1 project involves laying of the transmission pipeline from Baricho pumping station to a proposed reservoir at Kakuyuni, Rehabilitation of existing DN 600mm Baricho – Kakuyuni pipeline system by replacing of non-functional valves and the associated fittings, installation of additional Electromechanical works at the Baricho water works, Construction of a new water reservoir of capacity 5,000 m^3 at Kakuyuni and School Library (herein referred to as "The Project").

The Project is located within Kilifi County. It aims at improving water supply to Malindi, Watamu, Kilifi and Gongoni towns and their surrounding environs including the communities living along the pipeline route within Lango Baya, Kakoneni, Jilore and Kakuyuni centres. The target areas fall within the jurisdiction of two water services providers; namely, Kilifi-Mariakani Water and Sewerage Company (**KIMAWASCO**) and Malindi Water and Sewerage Company (**MAWASCO**). The project will provide a new additional pipeline from Baricho to Kakuyuni, associated electromechanical works and new reservoir at Kakuyuni (Lot I), transmission mains from Kakuyuni reservoir to Ganda tanks (Lot 2) and transmission mains from Kakuyuni reservoir to Kilifi tanks (Lot 3).

The water source, Baricho Well field, has in the recent past undergone significant expansion and rehabilitation works which has increased its capacity by 22,000 m^3/day to a total production of 112,000 m^3/day. Out of the total production, 60,000 m^3/day will be conveyed to Mombasa City through the Mombasa pipeline and the remaining 52,000 m^3/day to Malindi, Watamu, Kilifi and Gongoni towns.

The design capacity of the existing Baricho-Kakuyuni line is 30,000 m^3/day, which is inadequate to deliver the additional amount of water produced. In addition, the capacity of the transmission pipelines from Kakuyuni to Kilifi and Ganda are inadequate and need to be augmented. Consequently, additional parallel pipelines transmission capacity from Kakuyuni to Kilifi and Ganda are required to meet the projected water demands. This report is an Environmental and Social Impact Assessment (ESIA) Comprehensive Project Report (CPR) for the proposed Lot 1 works only. Assessments for Lot 2 and Lot 3 works will be conducted separately.

E-2 Water supply in The Project Area

The Baricho Water Works is located in Kilifi County along the Southern Bank of Sabaki River. The water works sources its water from eleven (11No.) boreholes segregated into two well fields; the upstream and downstream boreholes with three (3No.) and eight (8No.) boreholes respectively. The current production of the Works stands at 90,000m^3/day and the production set to reach

112,000m^3/day upon completion of the currently ongoing works at the wells. The works has a future potential of 180,000m^3/day according to the Water Distribution Master plan by MIBP/Nippon 2017. The safe yield for this future potential production is estimated as 175,000m^3/day under the Water Supply Master Plan for Mombasa and other Towns in the Coast Province (TAHAL/BHUNDIA 2013).

The water from the boreholes is pumped into a holding and chlorine contact tank of 5,000m^3 capacity where it undergoes Ca-hypochlorite disinfection and then it gravitates into a pump house. The Baricho pumping station consist of High Lift Pumps - Mombasa and Malindi pump systems - supplying water to Mombasa and Malindi towns via Nguu Tatu and Kakuyuni Reservoir respectively and as follows;

a) **Low Lift Pump system**: Pumps water from the boreholes to the 5,000 m^3 holding tank. The pumps have a motor rating of between 110kW to 180kW.
b) **Mombasa Pump System:** It comprises of five (5 No.) pumps (3 No. duty, 2No. standby) with a motor rating of 840kW. It pumps water directly from the DN 900mm holding tank outlet pipe into a DN800 -600mm, 104km, DI rising main to Nguu Tatu reservoir (22,500m^3 capacity).
c) **Malindi Pump System:** It comprises of three (3 No.) pumps (2 duty, 1 standby) with a motor rating of 250kW. It pumps water from a 3,000m^3 sump tank to Kakuyuni Reservoir (1,250m^3 capacity at ground level of 120amsl) via a DN 600mm, 29km DI rising main.

The Nguu Tatu and Kakuyuni reservoirs feed into Mombasa and Malindi transmission and distribution systems respectively by gravity.

E-3 The proposed project

The proposed project will augment water supply to the towns of Malindi, Watamu, Kilifi and Gongoni and their surrounding environs including communities along the Pipeline route within Lango Baya, Kakoneni, Jilore and Kakuyuni centers so as to meet the projected water demands in the Water Distribution Master Plan. This will be achieved through;

- Installation of additional Electromechanical works at the Baricho water works – installation of additional new pumps, surge vessels and associated electrical works;
- Laying of a water pipeline rising main from Baricho water works to Kakuyuni reservoir. The pipeline will be of diameter DN 800mm, steel pipeline, 29km and will be laid mainly along the road reserve of C103; A social screening has been conducted and established that no any form of physical or economic displacement is envisaged. Consultation with KeRRA and KENHA was conducted and they requested that necessary permits to be obtained before commencement of works along the road reserves.
- Construction of a new water reservoir of capacity 5,000 m^3 at Kakuyuni. The reinforced concrete reservoir will be sited next to the existing water tank and the proposed site belong to Kakuyuni High school;

- Rehabilitation of existing system – replacement of non-functional air valves and associated fittings along the existing DN 600mm Baricho – Kakuyuni Pipeline.
- Construction of a fully furnished modern library for the school.

E-4 Project location/ ownership

The proposed pipeline will be laid on the C103 (Malindi – Ganda – Kakuyuni Salgate Road) road reserve, Installation of additional electromechanical works will be carried out at the existing Baricho pumping station while the construction of a new water reservoir will be constructed next to the existing water tank at Kakuyuni Boys Secondary School which is a public school.

Social screening for the entire 29km stretch was conducted (Annex 7) to verify any form of displacement i.e. Physical, economic. Similarly, consultations were held with roads authorities (Questionnaires attached) and the school (Minutes attached). A separate social screening report has been prepared, submitted, reviewed and approved by the World Bank.

The pipelines route and the tank site are free from encroachment and therefore no Resettlement issues will be triggered as described by World Bank environmental and social safeguard policies, Involuntary Resettlement OP 4.12.

E-5 Legal and policy framework

The Report has presented the relevant National policies, legislation and institutional frameworks that guide preparation of ESIA and the World Bank Environmental and Social Standards. Policy provisions included; Constitution of Kenya 2010, Kenya Vision 2030, National Environment Policy (NEP) 2013, HIV and AIDS Policy 2009, National Land Policy 2009, Gender Policy 2011, Kenya Youth Development Policy 2018, the Sustainable Development Goals (SDGs), Acts of Parliament applicable included; EMCA 1999 as amended in 2015, Land Act 2012, Water Act 2016, water rule 2007, County Government Act No. 17 of 2012, Physical and Land Use Planning Act, 2019 The Urban Areas and Cities Act 2011, Occupational Safety and Health Act (OSHA 2007), The Public Health Act (Cap.242), Employment Act 2007 and Work Injury Benefits Act (WIBA).

The assessment has also referred to the Bank's Operational Policies (OPs). These operational policies include:

- OP 4.01 Environmental Assessment;
- OP 4.12 Involuntary Resettlement;

E-6 Project Justification

The project has been necessitated by lack of sufficient water supply to Malindi, Watamu, Kilifi and Gongoni towns and their surrounding environs including communities along the pipeline routes of Kilifi County. Supply of water in the targeted area is currently rationed. Construction of additional

transmission pipeline from Baricho and a new Tank at Kakuyuni Boys Secondary school will be a milestone towards stabilizing water supply to the targeted towns and villages.

E-7 ESIA Process Approach and Methodology

The World Bank OP 4.01 and the EMCA 1999 as amended in 2015 through the Legal Notice No. 101: The Environmental (Impact Assessment and Audit) Regulations, 2019 requires that project-affected groups and local CBOs and non-governmental organizations (NGOs) be consulted during the impact assessments process about the project's potential environmental and social impacts. The general steps followed during the assessment included: -

- Environment and social screening, during which the proposed project was identified as among those to be subjected to the ESIA process as stipulated under Schedule 2 of Kenya Gazette Supplement No.74 (Acts No. 5) EMCA amendment, 2015;
- Environmental and social scoping that provided the key environmental issues and social risks to be considered;
- Literature review of relevant reports, legal, institutional and policy frameworks;
- Physical inspection and assessment of the proposed project area;
- Analysis of project alternative options;
- Public participation and Stakeholders Consultation;
- Baseline field environmental and socio-economic assessment;
- Project impact analysis, and Impact mitigation planning;
- Environmental and social management planning and preparation of an ESMP and
- Preparation of ESIA Comprehensive Project report.

Public sensitization meetings were held within the project area in May 2021 with the help of the respective local administration more so from NGAO, who included the area chiefs and assistant chiefs. Consultation meeting were held in adherences to WHO and MoH guidelines on measures to curb infection and spread of COVID - 19. A total of 3 meetings were held as shown in Table E7-1.

E7-1: Public participation meeting schedule

No	Date	Venue	Location	No of Participants
1.	06.05.2021	Chiefs Camp	Lango Baya	25
2.	06.05.2021	Chiefs Camp	Jilore	23
3.	07.05.2021	Kakuyuni Boys Secondary school	Goshi	22

The following stakeholders were present in the meetings;

- MCA Kakuyuni Ward
- Area chiefs
- Area assistant chiefs
- Deputy principal Kakuyuni Boys Secondary school

- Board members of Kakuyuni Boys Secondary School
- Village elders
- Area residents

Table E7-2 below presents a summary of outcome of the public participation for the 3No meetings that were held

Table E7-2: Summary of Comments and Responses from Public Sensitization Meetings

Location	Comments	Response
Goshi	The residents requested to know the total project cost and how much was set aside for the CSR	The consultant informed the meeting that the project cost is approximately Ksh 2 billion, the residents were advised that during implementation phase and based on the budget some CSR proposals may be considered by the implementing agency.
	The community wanted to know if they will be allowed to get water from the new pipeline after project completion	The community will use the existing pipeline and additional water kiosks will be considered (this was mentioned in anticipation that the water kiosks will be done by the WSPs upon project completion. MAWASCO and KIMAWASCO will revive the existing kiosks once the 2nd pipeline is laid). However, the new proposed rising main will only be used to supply water to the proposed Kakuyuni tanks
	The residents wanted to know how sound pollution from the heavy machinery will be mitigated since one of the construction sites is near a school compound (Proposed Kakuyuni Tank).	Minimal use of machinery will be made where necessary.
	The community wanted to know if there will be any land and way leaves compensation.	For the pipeline route, it was noted that it will use the existing road reserve. The new proposed tank will be constructed at Kakuyuni Boys Secondary School. A survey along the pipeline route had been undertaken and there is no physical or economic displacement anticipated, appropriate measures will be put in place to

Location	Comments	Response
		mitigate such displacement if encountered. In addition, relevant permit from road authorities will be obtained before commencement of works along the reserves
	The residents wanted to know if there were any plans set aside for the non-functional kiosks.	The non-operational kiosks will be rehabilitated; MAWASCO and KIMAWASCO will revive the existing kiosks once the 2nd pipeline is laid
	The residents wanted to know if community members will be given first priority when it comes to job opportunities	They were informed that the contractor will recruit all unskilled, semi-skilled and certain cadres of skilled labour from the local community, provided these are available.
	The residents further requested the Water Service Companies to consider reduction of connection charges	They were informed that the issue will be taken by the consultant to KIMAWASCO and MAWASCO who will pick up and address it where possible
Lango Baya	The residents wanted to know if community members will be given first priority when it comes to job opportunities	They were informed that the contractor will consider that and for a proper recruitment, the chief will be involved.
	The residents further requested the Water Service Companies to consider reduction of connection charges.	They were informed that the issue will be taken to respective water companies who will pick up and address it where possible
	The residents wanted to know the exact route that the pipeline would pass so as combat the issue of disturbance	The participants were taken through the scope and areas where the pipeline will transverse. The pipeline will traverse from Baricho water works, to the existing CWWDA wayleave then onto C103 road up to Kakuyuni High School. The pipeline will be laid on the existing wayleave and based on the surveys that had been undertaken it was clear that no displacements of people or destruction of properties will be experienced during the implementing phase.

Location	Comments	Response
	The residents also requested that recommendation letters be given to the casuals who will have cooperated and worked throughout the project period.	The participants were informed that the contractor will be requested to do recommendation letters to the employees who will participate in the project. However, an agreement will be made once the contractor is on board to determine the number of months under which one can be issued with a recommendation letter
	The residents requested for classroom construction at Mambo Sasa and an ablution block at Lango Baya market.	The participants were informed that discussion with the client will be done by the consultant to evaluate a possibility of having a CSR project at Lango Baya
	They also strongly emphasized on the issue of prompt reinstatement especially of broken pipes	The participants were assured of appropriate reinstatement throughout the project construction phase
Jilore	Residents wanted to know whether they will be compensated in case they are disturbed or displaced	The participants were informed that a survey and had been conducted in the proposed route and there will be no displacement or disturbance
	The residents wanted to know where the pipeline will follow	They were informed that the pipeline will follow the old pipeline way leave from Baricho to Kakuyuni tanks
	The resident wanted to know whether there will be any CSR	The consultant requested the community to come up with CSR ideas to be presented to the client by the consultant for immediate for future consideration.

The main key informants targeted in the consultations were both Government and private Institutions operating within the project area. Listening to stakeholder concerns and feedback is a valuable source of information that can improve project design and outcomes and help in identifying any impacts. The ESIA team held consultation meetings with Key stakeholders as shown in Table E7-3 below.

E7-3: Key Stakeholder Consultation Details

Name	Designation
Josphat Mutisya	Deputy County Commissioner –Kilifi County
Hezekiah Mwarua	Managing Director KIMAWASSCO
Kithi Robert	Deputy Principal Kakuyuni Boys Secondary School
Kingi Kazungu	Chief Officer Water and Environment Kilifi County
Assad Sheyumbe	Sub County Administrator-Malindi Sub County
Isaac Chibule	Technical Manager MAWASCO
Nixon Mramba	MCA Kakuyuni ward
Farida Mazrui	Kakuyuni sub location Assistant Chief
Naphtali Biryah	Goshi Senior Chief
John Kipsiwa	Assistant County Commissioner- Kilifi County
Jacinta Makau	Planner Kilifi County
Linet Zabibu	Assistant Environmental Officer Kilifi County
Eng. Nicodemus Kerogo	Director, Department of Transport, Kilifi County
Eng. T. Kendagor	Deputy Director, KeRRA Coast Region

A summary of outcomes of the key stakeholder consultations undertaken during preparation of this ESIA is as presented below:

- Requested for adequate consultation before commencement of the project to create a sense of project ownership to the locals
- The project is viable and will supply water to the targeted population who need this basic commodity
- Requested the project team to ensure utilization of road reserves without interfering with private land parcels
- Contractor to practice proper backfilling on the pipeline excavations to avoid accidents and other unfortunate occurrences.
- The project will create job opportunities to the locals
- Appropriate signage's to be erected
- Compensation to be done in case of social or economic displacement as a result of project implementation
- Project team to adhere to COVID 19 protocols in curbing the spread
- Reinstatement to be done in a timely manner
- Water to be sprinkled to minimize on dust pollution
- Child labour and early pregnancies should be avoided
- Proper protection measures during construction along gullies to avoid erosion
- A CSR that will benefit Kakuyuni Boys school is presented in the ESMP.

E-8 Purpose of the ESIA Report

Coast Water Works Development Agency is proposing to implement the proposed Water Supply Project LOT 1 - Transmission Pipeline from Baricho to Kakuyuni Tanks that will improve supply of water to Malindi, Watamu, Kilifi and Gongoni towns and their surrounding environs including community living along the pipeline route in Kilifi County.

As a requirement under the Environmental Management and Coordination Act (EMCA, Cap 387), the proposed project requires an EIA report because it belongs to the activities listed in Schedule II that require an ESIA. The key purpose of the ESIA report is to ensure that the key environmental and social issues associated with the project are identified early enough so that the necessary mitigation measures are noted and integrated in the final project design. This ESIA report is part of the ESIA implementation framework in Kenya and is expected to assist NEMA in decision making concerning the project.

E-9 Potential impact and mitigation measures

E-9-1 Positive impacts

The project is envisaged to have positive impacts after completion of the civil works and commissioning. A summary of anticipated positive impacts of the project include:

- Employment opportunities: With the construction of the proposed project, there will be employment opportunities for both professionals and unskilled workers; earnings from the wages will improve their living standards. The workers will include casual labourers, plumbers and engineers who are expected to work on the site for a period of time. Semi- skilled, unskilled labourers and formal employees are expected to obtain gainful employment during the period of construction. With labour intensive construction technologies, the project will provide employment for youth and provide support to the GoK initiatives on creation of jobs.
  Employment opportunities will also be of benefit in economic and social sense. Economic sense means, that abundant unskilled labour will be used while social sense signify that the poor community will be engaged in productive employment other than remaining idle and helpless which in most cases may translate to engagement in crime
- Creation of a market for construction materials - The project will require materials, some of which will be sourced locally and some internationally.
- Provision of fully furnished modern library for the school as part of the project's CSR.
- Economic growth - Through the use of locally available materials
- Injection of money into the local economy: A large sum of the project money shall be released into the local economy due to the construction activities

- Creation of wealth- The proposed project will ultimately provide revenues to the beneficiaries and expand the wealth base for the nation as a whole. Further, the value of land within the project area will rise thus improving on the existing wealth for the residents.
- Improved well-being of women and children: Water accessibility at homesteads would translate to time saving by the women. Time saved thus would be invested in other engagements that could bring financial benefits to the family. Children also bear the brunt of water borne diseases while women are tied down to provide nursing care to the sick family members
- Improved accessibility to clean and reliable water supply-The proposed water supply project Towns of Malindi, Kilifi, Watamu and Gongoni and their surrounding environ including communities along the pipeline route of Lango Baya, Kakoneni, Jilore and Kakuyuni centers. This will reduce the water shortage experienced in the area.
- Improved revenue to both Malindi and Kilifi-Mariakani Water and Sewerage Companies from increased customer base as the proposed project will increase the number of residents being served by the water companies. It will also make the supply reliable thus increasing the revenue base. Further, this will improve sustainability of the companies

E-9-2 Key Potential Negative Impacts and Recommended Mitigation Strategies

Activity	Associated Impacts	Management Actions
Earth moving, tank construction and excavations (channelling and site preparations)	• Vegetation Cover destruction	• Reinstatement of the project sites to their original after completion of civil works • All hedges damaged during construction to be reinstated after completion of the Works • The contractor to adhere to the delineated construction work area. • Planting of grass along the way leave and Pipeline friendly tree to be grown after construction
	• Loss of top soils and siltation	• Stock piling of top soil, construction material and wastes should be done only at designated sites approved by the supervising engineer, • erosion prevention through berming of loose soil sites should be done in all areas susceptible to agents of erosion. Use of soil erosion control measures e.g. construction of gabions, vegetating the site after laying pipes

Activity	Associated Impacts	Management Actions
Excavation and vegetation clearing	• Reduced water quality • Siltation • Increased water demand • Increased toxic levels in soil and water	• Proper and compacted back filling. • The contractor to stick to clear delineation of the construction site to avoid unnecessary vegetation loss. • Planting of vegetation cover along the pipeline way leave • Any polluted soil should be handled with care for proper disposal. • Concrete mixing shall be done on concrete slabs or a large metal sheet or mortar boards • Maintenance of vehicles to be done strictly at designated place/Drip trays to be used to avoid oil spills.
Impact on water	• Servicing of machinery • Removal of vegetation leading to erosion • Utilization of water for construction activities and for domestic purposes	• Storing of fuels, oils and chemicals on impermeable grounds away from surface drains • The machines to be properly serviced offsite and maintained to avoid spillage of effluents into the water bodies • Water containing pollutants should be kept in a conservancy tank for removal to prevent pollution of the surface water and surface water bodies. • Prompt action to be taken by the contractor in case of any pollution incident. • Meter and monitor construction water usage while ensuring conservation measures are adopted, and workers sensitized on the same
Construction activities and materials on site	• Generation of Solid waste	• A site waste management plan should be prepared by the contractor before commencing works • All solid waste will be collected and segregated at a central location at each site and will be stored temporarily until removal to an appropriately permitted disposal site in the vicinity of the site by a licensed waste handler.

Activity	Associated Impacts	Management Actions
		• No dumping within the surrounding area is to be permitted. Where potentially hazardous substances are being disposed of, a chain of custody document should be kept with the environmental register as proof of final disposal. • Wherever possible reusing and recycling should be carried out. • Maximum reuse of excavated material.
Storage of fuel oils, lubricants, chemicals and flammable materials	• Hazards of fire outbreak, oil and chemical spills.	• Oil and other hydrocarbon storage areas to be purpose-built with secondary containment • Checking and regular servicing of construction Equipment. • Re-fuelling of construction vehicles and mobile equipment at safe designated locations only, • Use of spill kits and applications of emergency spill procedures. • Provision of a 20cm layer of sand and ballast at the machinery storage area and diesel tank section, this layer act as sink to potential oil spills and will be replaced when saturated. • Vehicle maintenance to be done in impervious concrete platforms and grease and oil traps to be used. • Provide appropriate firefighting equipment including fire extinguishers. • Safe disposal of used oil through licensed hazardous waste handler.
Trench excavation Road crossings Construction of the tank	• Disruption of public utilities	• Contractor to carry out piloting to locate services such as pipes and cables along the Pipeline Route before commencing excavation works. • Length of excavation to be restricted to sections that can be reinstated within the shortest

Activity	Associated Impacts	Management Actions
		period possible to minimize time of disruption of services. • Consultation and liaison with the various service providers will be undertaken throughout the project life.
Recruitment of workforce	• Labour influx and sexual offences to minors	• Effective community engagement and strong grievance mechanisms on matters related to labour. • Effective contractual obligations for the contractor to adhere to the mitigation of risks against labour influx • Proper records of labour force on site while avoiding child and forced labour • Fair treatment, non-discrimination, and equal opportunity of workers.
Employment	• Human Rights Principles and Gender Inclusivity	• Mainstream Gender Inclusivity in hiring of workers and entire Project Management as required by Gender Policy 2011 and 2/3 gender rule. • Comply to provisions of guidelines on incorporating Human Rights Standards and Principles, including Gender, in Programme Proposals for Bilateral German Technical and Financial Cooperation
Migration and immigration	• Increased Transmission of HIV/AIDS	• Sensitize workers and the surrounding communities on awareness, prevention and management of HIV/AIDS and sexual health and rights through staff training, awareness campaigns, multimedia and workshops or during community Barazas. • Use existing clinics to provide VCT services to construction crew and provision of ARVs for vulnerable community members

Activity	Associated Impacts	Management Actions
		• Ensure safety of women and girls in provision of VCT services. •
Immigration and migration to seek for job opportunities	• Increased spread of COVID - 19 among workers at construction site	• The Contractors will develop a SOPs for managing the spread of COVID-19 during project execution and submit them for the approval of the Supervision Engineer and the Client before mobilization. The SOPs shall be in line with the World Bank guidance on COVID-19, Ministry of Health Directives and site-specific project conditions; • Mandatory provision and use of appropriate Personal Protective Equipment (PPE) shall be required for all project personnel including • Avoid concentrating of more than 15 workers at one location. Where there are two or more people gathered, maintain social distancing at least 2 meters. All workers and visitors accessing worksites every day or attending meetings shall be subjected to rapid Covid-19 screening which may include temperature check and other vital signs; • Install hand washing facilities with adequate running water and soap, or sanitizing facilities at entrance to work sites including consultation venues and meetings and ensure they are used; • Ensure routine sanitization of shared social facilities and other communal places routinely including wiping of workstations, door knobs, hand rails etc;

Activity	Associated Impacts	Management Actions
	• Spread of COVID-19 amongst community members during consultations processes	• Electronic means of consulting stakeholders and, holding meetings, whenever possible, shall be encouraged whenever feasible. One-on-one engagements for the PAPs while observing social distance and adhering to PPE wearing shall be enforced; • Avoid concentrating of more than 15 community members at one location. Where there are two or more people gathered, maintain social distancing at least 2 meters • The team carrying out engagements within the communities on one-on-one basis will be provided with appropriate PPE for the number of people they intend to meet; • Use traditional channels of communications (TV, newspaper, radio, dedicated phone-lines, public announcements and mail) when stakeholders do not have access to online channels or do not use them frequently. Ensure to provide and allow participants to provide feedback and suggestions; • Hold meetings in small groups, mainly in form of FGDs if permitted depending on restrictions in place and subject to strict observance of physical distancing and limited duration. • In situations where online interaction is challenging, disseminate information through digital platform (where available) like Facebook and WhatsApp & Chat groups. • Ensure online registration of participants, distribution of consultation materials and share feedback electronically with participants.

Activity	Associated Impacts	Management Actions
Immigration and migration to seek for job opportunities	• Increased crime and insecurity	• Contractor and Supervision Team to liaise regularly with the Local Administration and Police Service to address any security and crime arising during project implementation. • Contractor to provide 24 hours' security to Workforce Camps, Yards, Stores and to the Supervising Team's Offices
Construction activities	• Impact on cultural heritage	• Use of "chance find" procedures
Emissions from Construction plant and equipment and vehicles	• air pollution and dust generation	• The contractor to comply the provisions of EMCA 2015 (Air Quality Regulations 2014), to be enforced by the Supervising Engineer. • Workers shall be trained on management/minimisation of air pollution from vehicles and machinery. • All construction machinery shall be maintained and serviced in accordance with the suppliers' specifications • The removal of vegetation shall be avoided until such time as clearance is required and exposed surfaces shall be re-vegetated or stabilized as soon as practically possible • The contractor shall not carry out dust generating activities (excavation, handling and transport of soils) during times of strong winds • Vehicles delivering construction materials and vehicles hauling excavated materials shall be covered to reduce spills and windblown dust • Water sprays shall be used on all earthwork's areas within 200 metres of human settlement especially during the dry season

Activity	Associated Impacts	Management Actions
Machinery activities and servicing	• Noise and excessive vibrations	• Contractor will comply with provisions of EMCA 2015 (Noise and Excessive Vibrations Regulations of 2009) • The Contractor shall keep noise level within acceptable limits (60dBA for sensitive locations (residential, educational, health institutions etc) and 75 dBA for other areas during the day) and construction activities shall, where possible, be confined to normal working hours in the residential areas • Hospitals and other noise sensitive areas such as schools shall be notified by the Contractor at least 5 days before construction is due to commence in their vicinity. As feasible, noisy construction activities of the reservoir tank in Kakuyuni high school shall be planned to occur outside learning hours for least disruption • Undertake Noise and Excessive Vibration Assessments • Effective use of appropriate PPE (ear plugs or muffs) by exposed workers and Proper maintenance of machines.
Occupational Health and Safety	• Risk of accidents at work site	• Contractor to provide a Healthy and Safety Plan prior to the commencement of works to be approved by the Supervising Engineer. • Construction Workers and the Supervising Team to be provided with Personal Protective Equipment including gloves, gumboots, overalls and helmets. Use of PPE to be enforced by the Supervising Engineer • Provide task specific PPEs for welding of steel pipes • Fully stocked First Aid Kits to be provided within the Sites, Camps and in all Project Vehicles. Trained first aiders to be available on site at any time works are ongoing. The ratio of first aiders

Activity	Associated Impacts	Management Actions
		to workers shall be in line with the OSHA First Aid Rules • Isolate the site for access by the local communities during the construction for their safety and health. Camps and Work Sites to be fenced off and Security Guards provided to restrict access to members of the public. • Strict use of warning signage and tapes where the trenches are open and at other active construction sites • Contractor to Employ and train Road Safety Marshalls who will be responsible for management of traffic on site • Contractor to provide a Traffic Management Plan during construction to be approved by the Supervising Engineer • Provision of adequate potable drinking water to workers • Reporting of all safety and health incidents on site.
Traffic management on site	• Traffic congestion	• The contractor shall develop a traffic management/safety plan; • The Contractor should provide temporary road signs or notices to indicate ongoing works; • The Contractor together with the Resident Engineer should Plan itineraries for site traffic on a daily basis and avoid peak traffic periods;
Generation of income	• Increased GBV	• The Contractor shall require his employees, sub-contractors, sub-consultants, and any personnel thereof engaged in construction works to individually sign and comply with a Code of Conduct with specific provisions on protection from sexual exploitation and abuse • The contractor will implement provisions that ensure that gender-based violence at the

Activity	Associated Impacts	Management Actions
		community level is not triggered by the Project, including: - effective and on-going community engagement and consultation, particularly with women and girls; - review of specific project components that are known to heighten GBV risk at the community level, e.g., compensation schemes; employment schemes for women; etc. • Ensure clear human resources policy against sexual harassment that is aligned with national law • Integrate provisions related to sexual harassment in the employee COC • Ensure appointed human resources personnel to manage reports of sexual harassment according to policy • the contractor shall develop specific plan for mitigating these known risks, e.g., sensitization around gender-equitable approaches to compensation and employment; etc • The contractor will ensure adequate referral mechanisms are in place if a case of GBV at the community level
Sexual Exploitation and Abuse	• Sexual Exploitation and Abuse by project workers against community members	• Develop and implement a SEA action plan with an Accountability and Response Framework as part of the C-ESMP. The SEA action plan will follow guidance on the World Bank's Good Practice Note for Addressing Gender-based Violence in Investment Project Financing involving Major Civil Works (Sept 2018). • The SEA action plan will include how the project will ensure necessary steps are in place for: - Prevention of SEA: including COCs and ongoing sensitization of staff on

Activity	Associated Impacts	Management Actions
		responsibilities related to the COC and consequences of non-compliance; project-level IEC materials; - Response to SEA: including survivor-centered coordinated multi-sectoral referral and assistance to complainants according to standard operating procedures; staff reporting mechanisms; written procedures related to case oversight, investigation and disciplinary procedures at the project level, including confidential data management; - Engagement with the community: including development of confidential community-based complaints mechanisms discrete from the standard GRM; mainstreaming of PSEA awareness-raising in all community engagement activities; community-level IEC materials; regular community outreach to women and girls about social risks and their PSEA-related rights; • Management and Coordination: including integration of SEA in job descriptions, employments contracts, performance appraisal systems, etc.; development of contract policies related to SEA, including whistle-blower protection and investigation and disciplinary procedures; training for all project management; management of coordination mechanism for case oversight, investigations and disciplinary procedures; supervision of dedicated PSEA focal points in the project and trained community liaison officers.

E-9 Grievance Handling Mechanism

This ESIA establishes all the project proposed works and have established Grievance Redress Mechanism (GRM). In addition, this ESIA has enhanced the GRM through the below described three-tier Grievance Mechanism.

(i) Local committee

It is desirable to resolve all the grievances at the community level to the greatest extent possible. The community or settlement level grievance mechanism must be credible and generally acceptable. The grievance redress mechanism will aim to solve disputes at the earliest possible time in the interest of all parties concerned. The committee comprises of Community Elders, Women's Representative, Youth Representative, Representative of Vulnerable Groups and the Location Chief who chairs the committee. The officer addressing construction-related grievances will give opportunity to the local communities and the public to express any grievances related to project.

This committee will sit at the Chiefs office. The following procedure is proposed:

- A PAP registers a grievance and within one working day, the committee members are alerted of the case;
- The affected person is immediately informed of the next date of the scheduled hearing. Depending on the case load, a maximum of 7 working days should be given between the date that a case is recorded and the date when the hearing is held;
- The committee meets once every seven-calendar days to deal with emerging cases. At these meetings, hearings with the affected persons and related witnesses will be held;
- The committee will communicate its judgment to the affected persons within 3 working days;
- If no resolution is met or the PAP is not satisfied with the judgment, the case is moved to the next level by the committee. This will be done within 5 working days of the hearing.

(ii) Mediation Committees

In case the grievance is not resolved at first tier, the GRC handling grievances will be enjoined by the project committee. This committee will sit once a month at the County Government Office. The following procedure is proposed:

- A grievance is logged at the County Government Office and within five working days, a notice is sent out to all the interested parties informing them of the date of the hearing;
- A hearing will then be held within thirty days of the grievance being raised;
- In the event that investigations and technical witnesses are required, a maximum of thirty (30) calendar days will be taken prior to a hearing being held;
- The committee's decision will be communicated in writing within 5 working days of the date of the hearing;

- If the committee does not resolve an issue, the affected persons are free to go to the Land and Environment Court.

(iii) Land and Environment Courts of Law

If complainants are not satisfied by the decision of the first two tiers of the Grievance Mechanism, they can seek redress from the Courts of Law.

E-10- Covid – 19 Infection prevention and control measures

The review of this ESIA is undertaken during the Coronavirus disease (COVID-19) pandemic outbreak. The preparation of the ESIA including the relevant consultations have been undertaken in strict compliance with guidelines for infection prevention and control in the country. Additionally, specific mitigation measures have been introduced to prevent the spread of the pandemic during the construction period. Moreover, consultations required as part of the mitigation measures, such as during training on E&S issues, also pose a risk of infection to communities. For this reason, the risk of contracting the virus during consultations will be avoided, minimized and mitigated with specific measures (wearing of face masks, use of hand sanitizers/ hand washing with soap, keeping a social distance of 1.5-2m in meetings and gathering not more than 15 people for meetings) to ensure national requirements on social distancing and recommendations on how to minimize contact are adhered to.

E-11 Recommendations

This project is feasible with a perspective of social economic evaluation, financial evaluation and environmental assessment, which has stable economic benefit and strong anti-risk capacity. The analysis of the project alternative options; no action alternative, relocation alternative, fundamental alternative, incremental alternative showed that the proposed development ad described in this ESIA is indispensable. Therefore, the project is necessary, and should be implemented as soon as possible. A comprehensive Environmental and Social Management Plan (ESMP) and Environmental Monitoring Strategy has been developed of which the proponent will implement to ensure minimal damage to the environment. We therefore, recommend the project for NEMA approval because it: -

a) Is well within the spirit of the National Constitution;
b) Will support in the implementation of the National Water Policy (2012);
c) Will contribute towards the realization of goals for Kenya's Vision 2030 goals, and
d) Will not violate the strategies for the National Spatial Plan 2015-2045.

In view of the findings of the ESIA, the proposed project is considered as environmentally and socially sound. Further, the project proponent is willing to guarantee that the potential adverse impacts whose means of mitigation have been disclosed in this report and most of them have

already been incorporated in the project design will be effectively implemented. On the basis of these findings, it is recommended that the proposed LOT 1 - Transmission Pipeline from Baricho to Kakuyuni Tanks in Kilifi for supply of water in the towns of Malindi, Kilifi, Watamu and Gongoni and their surrounding environ, installation of additional Electromechanical works at the Baricho water works, construction of reservoir at Kakuyuni Boys High school and rehabilitation of existing system be approved. Further, NEMA should issue the proponent with an EIA license as required by Kenya's environmental laws.

CHAPTER 1 : INTRODUCTION

1.1 Project Background

The development objective of Water and Sanitation Development Project (WSDP) is to improve water supply and sanitation services in select Coastal and North Eastern regions in Kenya. This project has four components. 1) The first component, Rehabilitation and expansion of urban water supply and sanitation services in the coastal region, has the following subcomponents: (i) Support to coastal counties; and (ii) Support to the coast bulk water services provider. 2) The second component, Expansion of water supply and sanitation services in underserved North Eastern counties, aims to finance a program of activities designed to improve water supply and sanitation services in the North Eastern counties, such as Wajir town in Wajir County and the Dadaab refugee camp host communities in Garissa County. 3) The third component, National performance-based financing, has the following two subcomponents: (i) Support for water and sanitation infrastructure investments and services; and (ii) Technical assistance for national performance-based financing. 4) The fourth component, Project management, finance a program of activities designed to strengthen the capacity of the Recipient for project management, implementation and coordination, and Monitoring and Evaluation (M and E).

Coast Water Works Development Agency has received funds under the programme on behalf of the Government of Kenya and intends to use these funds in implementation of the proposed Water Supply Project LOT 1 - Transmission Pipeline from Baricho to Kakuyuni Tanks, Rehabilitation of existing DN 600mm Baricho – Kakuyuni pipeline system by replacing of non-functional valves and the associated fittings, installation of additional Electromechanical works at the Baricho water works, Construction of a new water reservoir of capacity 5,000 m^3 at Kakuyuni and a Library for the school.

The Second Baricho – Kakuyuni Pipeline and Transmission Mains to Kilifi and Ganda Tanks project is located within Kilifi County. It aims at improving water supply to Malindi, Watamu, Kilifi and Gongoni towns and their surrounding environs including communities along the pipeline route of Lango Baya, Kakoneni, Jilore and Kakuyuni centres of Kilifi County that are in the jurisdiction of two water services providers; namely, Kilifi-Mariakani Water and Sewerage Company (**KIMAWASCO**) and Malindi Water and Sewerage Company (**MAWASCO**). The project will provide a new additional pipeline from Baricho to Kakuyuni, new reservoir at Kakuyuni and transmission mains to Kilifi and Ganda Tanks.

The water source, Baricho Well field, has in the recent past undergone significant expansion and rehabilitation works which has increased its capacity by 22,000 m^3/day to a total production of 112,000 m^3/day. Out of the production, 60,000 m^3/day will be conveyed to Mombasa City through

the Mombasa pipeline and the remaining 52,000 m^3/day to Malindi, Watamu, Kilifi and Gongoni towns.

The design capacity of the existing Baricho-Kakuyuni line is 30,000 m^3/day, which is inadequate to deliver the additional amount of water produced. In addition, the capacity of the transmission pipelines from Kakuyuni to Kilifi and Ganda are inadequate and need to be augmented. Consequently, additional parallel pipelines from Kakuyuni to Kilifi and Ganda are required to meet the projected water demands. This report only covers Lot 1 and other two lots will be assessed and ESIA report for each presented separately.

1.2 Project Justification and Benefit

The project has been necessitated by lack of sufficient water supply to Malindi, Watamu, Kilifi and Gongoni towns and their surrounding environs including communities along the pipeline route of Lango Baya, Kakoneni, Jilore and Kakuyuni centers of Kilifi County. Supply of water in the targeted area is currently rationed. Construction of a new Tank at Kakuyuni Boys Secondary school will be a milestone towards leveraging water supply challenges in the targeted towns and villages.

1.3 Objectives of the ESIA

1.3.1 General Objective

The purpose of an environmental assessment (EA) is to improve decision-making and to ensure that the project under consideration is environmentally and socially sound and sustainable.

This ESIA assessment has been conducted in compliance with the Environmental Impact Assessment Regulation as outlined under the Gazette Notice No. 32 of 2003 amended in 2009 established under the Environmental Management and Coordination Act (EMCA), 2015 of Kenya, and the World Bank Operational Policies.

1.3.2 Specific Objectives of ESIA Investigations

This Environmental & Social Impact Assessment (ESIA) is expected to achieve the following objectives:

i. To present existing environmental, social and cultural setting of the target project area
ii. To identify potential environmental and social impacts (direct and indirect), including opportunities for enhancement; this includes the cumulative impact of the proposed project and other developments which are anticipated;
iii. To generate feasible alternative investments, sites, technologies, and designs,
iv. To provide preventive, mitigating, and compensatory measures
v. To provide detailed results of the public consultation and
vi. To prepare an Environmental and Social Management and monitoring Plan to mitigate the identified impacts so as to ensure sustainability of the proposed projects.

vii. To recommend cost effective measures to be implemented to mitigate against the expected environmental and social impacts

1.4 Project scope of works

The proposed works include:

- Installation of additional electromechanical works at the Baricho water works – installation of additional new pumps, surge vessels and associated electrical works;
- Laying of a water pipeline rising main from Baricho water works to Kakuyuni reservoir. The pipeline will be of diameter DN 800mm, steel pipeline, 29km and will be laid mainly along the road reserve of C103;
- Construction of a new water reservoir of capacity 5,000 m^3 at Kakuyuni. The reservoir will be sited next to the existing water tank and the proposed site belong to Kakuyuni High school
- Rehabilitation of existing system – replacement of non-functional valves and the associated fittings along the existing DN 600mm Baricho – Kakuyuni pipeline.
- Construction of a fully furnished modern library for the school

1.5 ESIA Approach and Methodology

The ESIA was carried out in line with the provisions of Environmental Management and Coordination Act (EMCA) 1999 as amended in 2015, the Environmental Impact Assessment and Audit Regulations, 2003 as amended in 2019 and the World Bank Operational Policies. Baseline data on project design was generated through discussion with the client and review of project documentation. Opinions formed were revalidated through fieldwork entailing site investigations and interviews with potentially affected people and secondary stakeholders.

To identify, predict, analyse and evaluate potential impacts that may emanate from the project, diverse study methods and tools including use of checklists, matrices, expert opinions and observations were employed. An Environmental and Social Management Plan comprising of an impact mitigation plan and modalities for monitoring and evaluation were then developed to guide environmental management during all phases of project development.

The assessment involved the following:

1.5.1 Literature Review

The Consultant reviewed literature related to the proposed project and the project area. These included feasibility study report, project drawings, and other studies on physiography, geology, hydrogeology, water resources and socio-economics of the project area. Legislation, policies and procedures in social and environmental management were also reviewed.

1.5.2 Environmental and Social Screening

Screening process was undertaken to decide whether the Proposed Water Supply Project LOT 1 - Transmission Pipeline from Baricho to Kakuyuni Tanks needed to be subjected to an ESIA study or not. The Environmental Management and Coordination Act (EMCA) 1999 as amended in 2015 specifies the projects which should be subjected to an Environmental Impact Assessment (EIA) before commencement of project activities. In this, schedule water supply and distribution infrastructure are classified under medium risk projects requiring assessment of project likely environmental effects and suggesting mitigation measures before implementation.

Based on this classification, the proposed project was therefore subjected to an Environmental and social impact Assessment. Coast Water Works Development (CWWDA), herewith referred to as the proponent, appointed SARI/SGAPI/GATH JV to undertake the ESIA assessment and prepare an ESIA report in fulfilment of the EMCA and Environmental Impact Assessment and Audit Regulations, 2003 as amended in 2019. A Resettlement Action Plan (RAP) screening report has been prepared separately, there was no need for conducting RAP since no displacement is anticipated

1.5.3 Environmental and Social Scoping

Scoping process involved the identification of significant environmental and social issues associated with the proposed works. The impacts of the proposed project were assessed through project site visits and the following;

- Evaluation of the location, extent of the water connections and the current land use of the affected area.
- Evaluation of the design and proposed construction activities, materials and methodology
- One on one interviews with key stakeholders and proposed project beneficiaries were applied in the determining location of pipeline available way leaves especially in areas where there are no settlements and general opinions of the people
- Discussion with the area residents on the potential impacts related to project implementation activities and corresponding mitigation measures.

1.5.4 Baseline Data Collection

Baseline data was collected on the proposed project site and the area residents. Data collection began in May, 2021 and continued throughout the ESIA process.

The data collected was on aspects such as: topography, local flora and fauna, soils and geology, socioeconomics, existing and past activities including human settlements, local surface and ground water resources, ambient air quality and noise levels (qualitative), waste management practices, and natural resources and cultural heritage aspects of the project areas.

1.5.5 Stakeholder Consultations

Stakeholder consultations were carried out to: inform project stakeholders of the proposed project; to explain the likely impacts (positive/negative) of implementing the project; and to obtain views, concerns, comments and suggestions from interested and affected parties regarding the proposed project.

Administration of structured questionnaires to Key informants, to members of the public and 3No public meetings were held in the project areas in adherences to World Health Organization (WHO) and Ministry of Health (MoH) guidelines to curb the spread of COVID 19 (Minutes and sample filled questionnaires are annexed 3 & 6). Detailed outcome of consultation including stakeholders interviewed is discussed in chapter 6 of this report.

CHAPTER 2 : PROJECT DESCRIPTION

2.1 Existing Baricho Water Works

Baricho well field is located in Kilifi County and 60km west of Malindi town and currently has an installed capacity of 112,000m^3/day following a recent rehabilitation works that increased the production by 22,000m^3/day. The water is abstracted from the Sabaki Aquifer (on the banks of the river) which is recharged by Sabaki River. There are eleven (11) wells each with capacity of 470 m^3/hr grouped into two (2) wellfields with the downstream group consisting of eight (8) wells and the upstream group consisting of three (3) wells. From the wells water is pumped using submersible Low Lift Pumps (LLPs) to a contact tank (capacity of 5,000 m^3) for chlorination as well as a sump for the High Lift Pumps (HLPs) which deliver the water to Mombasa, Malindi and Kilifi towns. It is noted that according to the Water Master Plan for Water Supply for the Coast Region (Tahal/Bhundia, 2014), the Baricho well field was found to have a potential capacity of 180,000 m^3/day upon full development by the year 2040.

2.2 Existing Water Supply to Mombasa, Kilifi and Malindi Water Companies

The treated water from Baricho plant is evacuated through two (2) pipelines namely: -

- The Sabaki/Mombasa Pipeline (sometimes referred to Baricho/Mombasa Pipeline)
- The Baricho/Kakuyuni Pipeline (sometimes referred to Baricho/Malindi Pipeline)

There are five (5) operational High Lift Pumps (HLP) dedicated to supply Mombasa from the Baricho pump house with three (3) as duty pumps and two (2) as standby pumps. The water is delivered via the Nguu Tatu storage tanks (1No. 18,000m^3 and 2No. 4,500m^3 tanks – totalling to 22,500m^3) using a DN800/600mm diameter, 104km pipeline (with a capacity of 60,000 m^3/day). There is also a booster pumping station located at Lower Ribe that supplies water to the Kaloleni area.

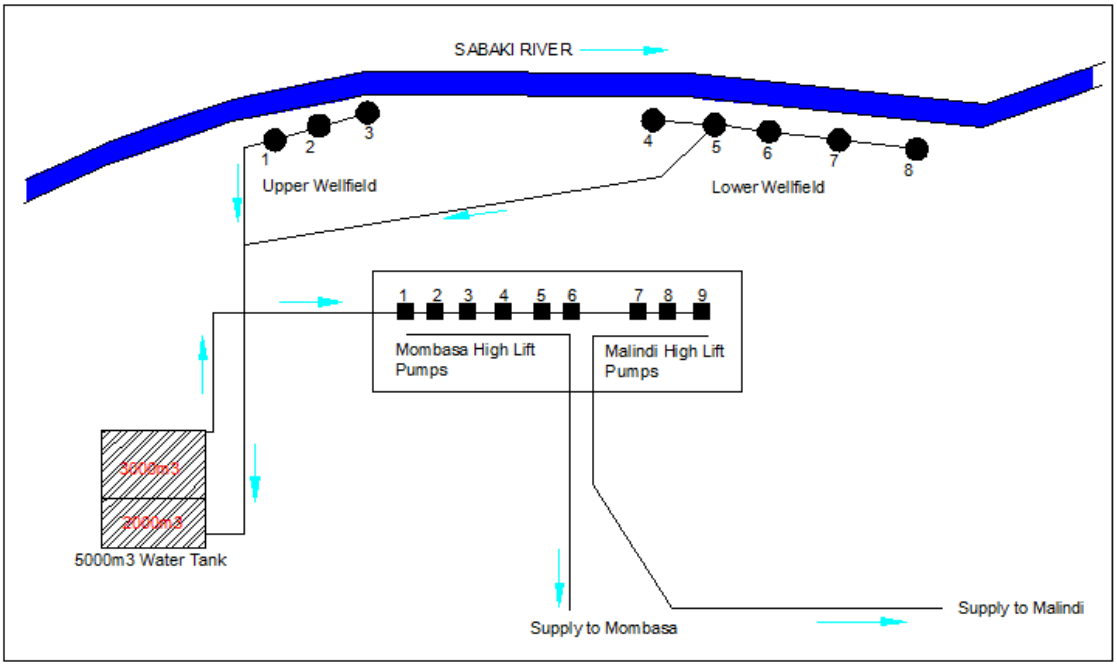


Figure 2-1: Existing water network from Baricho water works

A new pipeline (500mm diameter, 56km long, DI) connecting the Kakuyuni terminal reservoir and the Kilifi tank (in Kilifi town) was recently completed in 2019 under Water and Sanitation Services Improvement Program - Additional Financing (WaSSIP-AF). Also constructed under the same project were three new boreholes (9, 10,11 – see figure below). The pipelines and the boreholes are currently operational.

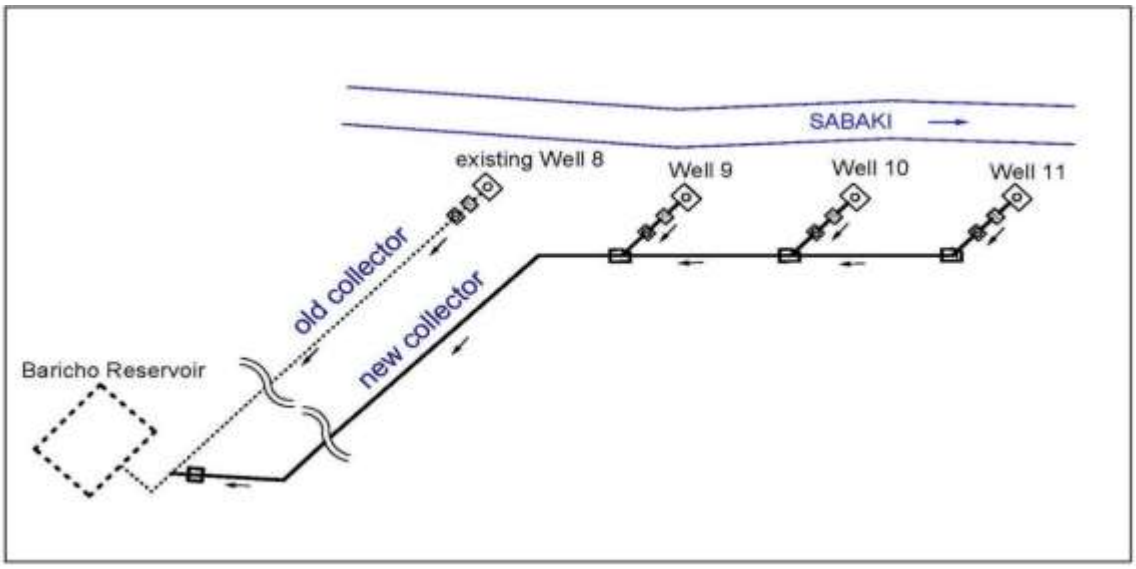


Figure 2-2: Schematic of the recently concluded works

The towns of Malindi, Watamu, Kilifi, Gongoni and the environs receive water supply from Baricho Source Works through the Sabaki-Malindi transmission main. Water is pumped from Baricho to the existing Kakuyuni tank (1,250m^3) through a 29km, DN 600 rising main (with a carrying capacity of 25,000 m^3/day). Water flows from the reservoir by gravity to Ganda junction then branches to Ganda and Kisimani reservoirs from where it flows to the supply areas. There are four (4) transmission pipelines from Kakuyuni reservoir namely: -

- Kakuyuni/Ganda pipeline, 12.3km long, diameters ranging 600-500-450-300mm,
- Kakuyuni/Kilifi pipeline, 56km long, diameter of 500mm,
- Kakuyuni/Gongoni pipeline, 37km long, diameter of 400mm,
- Kakuyuni/Watamu pipelines, 17km long and with diameters of (350mm and 200mm).

2.3 Proposed system

2.3.1 Overview

The proposed project will augment water supply to the towns of Malindi, Watamu, Kilifi and Gongoni and the surrounding environs so as to meet the projected water demands in the Water Distribution Master Plan. The project construction period is 12 months. This will be achieved through;

- Installation of additional Electromechanical works at the Baricho water works – installation of additional new pumps, surge vessels and associated electrical works;
- Laying of a water pipeline rising main from Baricho water works to Kakuyuni reservoir. The pipeline will be of diameter DN 800mm, steel pipeline, 29km and will be laid mainly along the road reserve of C103 (Malindi – Ganda – Kakuyuni – Salgate);
- Construction of a new water reservoir of capacity 5,000 m^3 at Kakuyuni. The reservoir will be sited next to the existing water tank and the proposed site belong to Kakuyuni High school and
- Rehabilitation of existing system – replacement of non-functional valves and the associated fittings along the existing DN 600mm Baricho – Kakuyuni pipeline.
- Construction of a fully furnished modern library for the school

2.3.2 Rising main from Baricho water works to Kakuyuni reservoir

The proposed Second Baricho – Kakuyuni pipeline (29km, DN 800mm) will be a rising main from the Baricho water works to the proposed new Kakuyuni reservoir. There is sufficient space parallel to the existing pipeline where this new pipeline can be laid along the C 103 KeRRA road (Malindi-Ganda-Kakuyuni-Salgate Road). The proposed pipeline route is as shown in the figure below;

Figure 2-3: General Layout for the proposed rising main

2.3.3 Kakuyuni Reservoir

A new Kakuyuni reinforced concrete reservoir of capacity 5,000 m^3 at Kakuyuni Boys High School is proposed to boost the existing tanks and this will require at least 1.4 acres of land. The CWWDA and the School's Management Board commenced negotiations for the use of the school land on a mutual benefit basis. A memorandum of understanding between the school and the CWWDA has since been concluded and a copy of the same is attached (Annex 5).

Other supporting infrastructure to be constructed at Kakuyuni will include the following;

- Access road & parking space;
- Site accommodation for the operator
- Fencing and adequate lighting and
- Drainage.

The proposed location of the reservoir is next to the existing tank as presented in the schematic diagram below. It is separated from the other school facilities with a dedicated entrance.

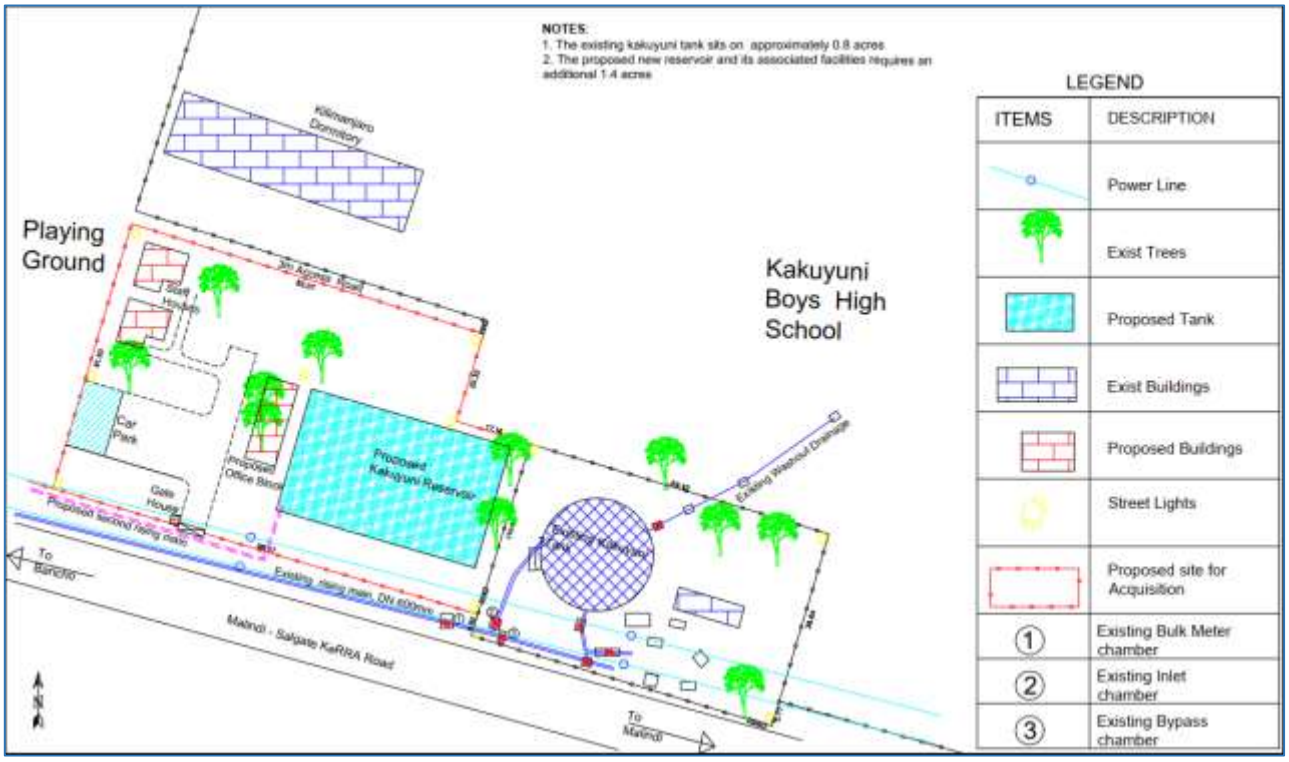


Figure 2-4: General layout for the proposed reservoir site at Kakuyuni Secondary School.

2.3.4 Electromechanical works

a) Pumps

There are two sets of high lift pumps in the pump house, the Mombasa high lift pumps and Malindi high lift pumps. The Mombasa high lift pumps are 5No. and pump the treated water, directly from the delivery pipe, to Nguu Tatu reservoirs (22,500m^3), on the outskirts of Mombasa town, for the Mombasa pipeline whereas the Malindi high lift pumps are 3No. and pump the treated water, from a 3,000m^3 sump tank, to Kakuyuni reservoirs for the Malindi pipeline. The Nguu Tatu and Kakuyuni reservoirs are on their respective high points and supply water to the consumers by gravity. The Mombasa high lift pumps are operated using auto transformer starters and the Malindi high lift pumps are operated using star delta starters.

Additional pumps are set to be installed to feed the new proposed rising main. The proposed pumping arrangement will include 3No. high lift pumps (two (2) duty and one (1) standby). The pumps will be sited within the existing pump house and will draw water from the 3,000 m^3 sump tank.

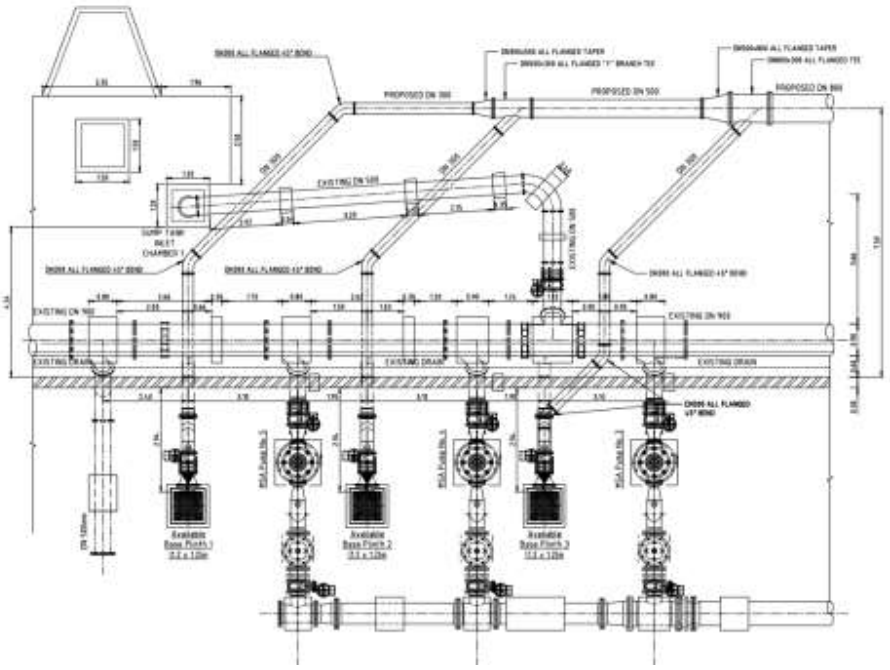


Figure 2-5: The proposed arrangement of the additional pumps

b) Power source, distribution and consumption

The Baricho water works power supply is from the utility Kenya power using 2No. 33KV overhead H.T lines, one from the Kilifi 132/33KV substation and one from the Kakuyuni 220/33KV substation. The one from Kilifi substation proved unreliable and thus the water works was connected to the new line from the Kakuyuni substation and metered on the CI3 tariff.

Figure 2-6: Baricho Water Works 33KV overhead H.T lines and substation

The key electrical loads at Baricho Water Works are high lift pumps, low lift borehole pumps, office block and staff quarters. The other loads are compressors, lighting and power loads for the other auxiliary buildings which are switch rooms and pump rooms.

Summary of the key energy consuming equipment is as tabulated below:

Table 2-1: Inventory of key energy consuming equipment at Baricho Water Works

Item	Description	Quantity
1.	Mombasa High Lift Pump pumping capacity of 833m^3/hr. and a 840KW/3.3KV motor	5
2.	Malindi High Lift Pump pumping capacity of 583m^3/hr. and a 250KW/415V motor	3
3.	Low Lift Borehole pumps	
	a) Bore hole pump pumping capacity of 470m^3/hr. and a 135KW/415V motor (boreholes 2, 6A & 8)	3
	b) Bore hole pump pumping capacity of 470m^3/hr. and a 160KW/415V motor (boreholes 1 & 3)	2
	c) Bore hole pump pumping capacity of 470m^3/hr. and a 180KW/415V motor (boreholes 4, 5 &7)	3
	d) Bore hole pump pumping capacity of 350m^3/hr., each rated 110kW (boreholes 9, 10 & 11)	3
4.	Surge Vessel Compressor Set for Mombasa line with a capacity of 30bar and rated at 13.5kW	1

Item	Description	Quantity
5.	Surge Vessel Compressor Set for Malindi line with a capacity of 1.05bar and rated at 6.89kW	1
6.	Street lighting	
	d) 8M galvanized single arm lighting pole with 125W Mercury Vapour lamp	40
	e) 6M galvanized single arm lighting pole with 125W Mercury Vapour lamp	22
7.	Office Block	1
8.	Staff Quarters	97

c) Proposed Electrical Works

- The pumping arrangement will utilize 3 pumps (2 duty and 1 standby). With the 2No. online pumps this presents an electrical load of 630 kW on the low voltage lines.
- A transformer rated at 2000KVA is to be installed rated at 33KV/433V to replace TX 4 at the 33KV switchyard and to supply power to a low voltage panel through an Automatic Voltage Regulator rated at 2000KVA. The AVR is to regulate the voltage on low voltage panel as the pumping station has been experiencing low voltage which has been damaging equipment.
- A low voltage panel rated at 2000 Amperes is to be established to supply power to the 3No. pumps. It is intended that the pump motors will be of Variable Frequency Drive (VFD). Space for mounting the low voltage panel will be located in the main pump hall. Further KPLC Ltd is to be contacted for the extra electrical load imposed on their power lines
- A SCADA system to monitor pumping and all electrical parameters is to be incorporated in the electrical control system for the pumping system whereby control functions can be carried out remotely.
- The client is planning to install solar firm in future to cut on the energy cost

2.3.5 Construction of a fully furnished modern library for the school

A fully furnished modern library will be constructed for the school under CSR as per the MoU attached as Annex 5 of this report.

CHAPTER 3 : ENVIRONMENTAL AND SOCIO - ECONOMIC BASELINE CONDITION

3.1 Introduction

Baseline conditions entail the sum-total of all biophysical, socio-economic, cultural and geo-physical conditions of the project area. Gathering of baseline data is necessary to meet the following objectives:

- To understand key social, cultural, economic, and political conditions in areas potentially affected by the proposed project;
- To provide data to predict, explain and substantiate possible impacts;
- To understand the expectations and concerns of a range of stakeholders on the proposed development;
- To inform the development of mitigation measures; and
- To benchmark future socio-economic changes/impacts and assess the effectiveness of mitigation measures.

3.2 Geographical characteristic of the project area

3.2.1 Project Location

The Second Baricho – Kakuyuni Water Pipeline Project, is located in Kilifi County and targets Malindi and Kilifi towns. Kilifi is one of the six counties in the Coastal region of Kenya and lies between latitude 2°20° and 4°0° South, and between longitude 39° 05° and 40° 14° East and covers a total surface area of 12,610 km^2. It borders the Counties of Tana River to the North, Taita Taveta to the West, Mombasa and Kwale to the South, Lamu County to the North East and the Indian Ocean to the East.

Kilifi County has seven sub counties, namely; Kilifi North, Kilifi South, Ganze, Malindi, Magarini, Rabai and Kaloleni. It has 17 divisions, 54 locations, 175 sub-locations. Magarini Sub-county is the largest while Rabai is the smallest.

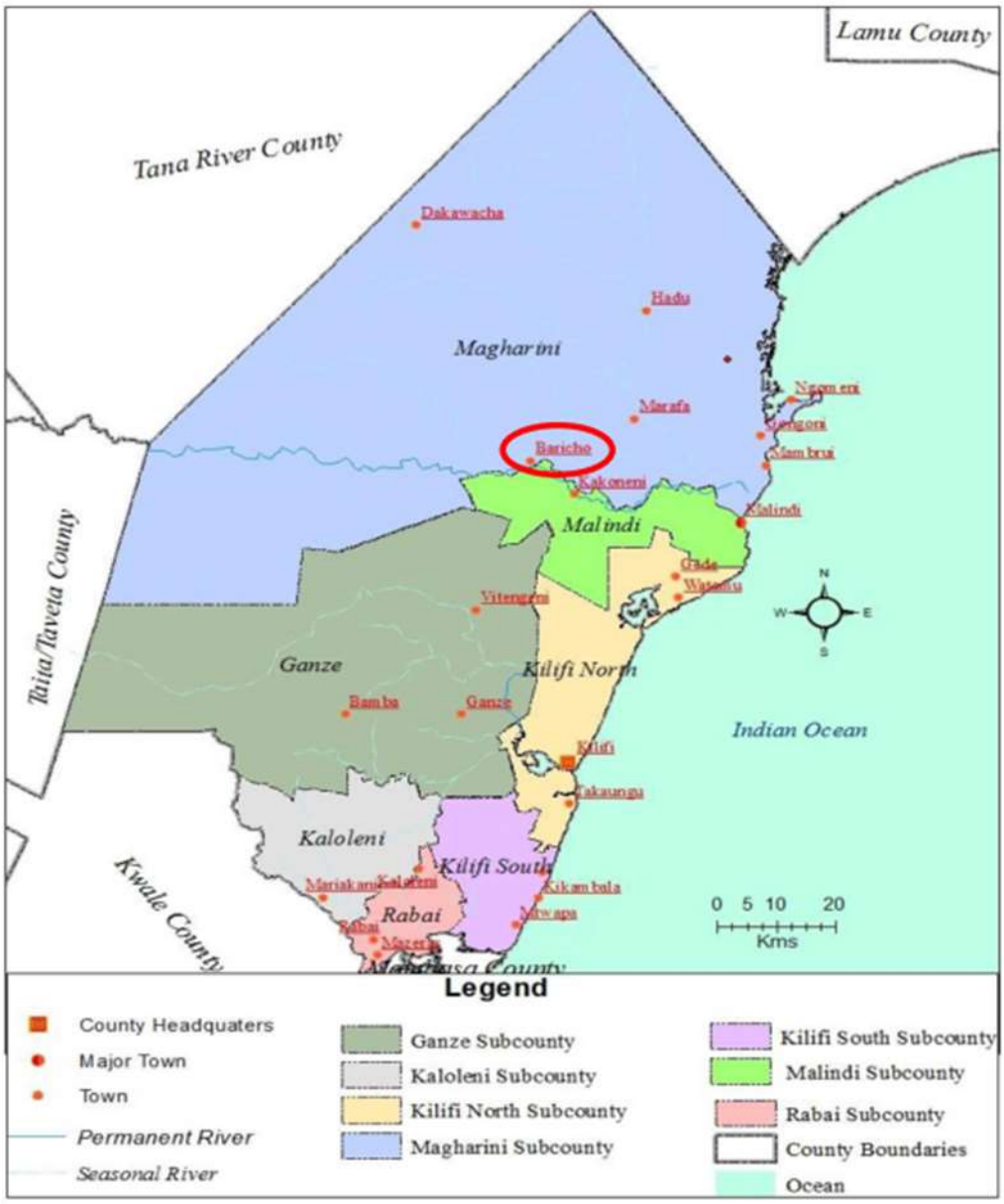


Figure 3-1: A General Map Showing the Sub Counties within Kilifi County.

Source Google maps
(https://www.devolutionhub.or.ke/file/6d4f701eb3f7d7fa4f706aea0cf18311.pdf; August 2021)

3.2.2 Topography

Kilifi County has four major topographic features with marked geological and rainfall characteristics which dictate the resource potential and land use patterns. These are the Coastal Plain, the Foot Plateau, the Coastal Range and the Nyika Plateau.

The Coastal Plain is a narrow belt, varying in width between 3 km and 20 km. It lies below 30 m above mean sea level, except for occasional prominent peaks on the Western boundary, which includes major hills like Mwembetungu and Mambrui. The rest of the area is broken by creeks and estuaries, giving rise to excellent marine and estuarine swamps, with mangrove forests of untapped potential for marine culture. The zone is composed of Triassic sediments of marine and deltaic origin, and includes coral limestone, marble, clay stones and other alluvial deposits, yielding deep soils which support agriculture. Kilifi Town lies within the Coastal Plains.

The Foot Plateau lies to the west of the Coastal Plain, with slightly undulating terrain between 60m and 135m altitudes. The plateau is characterized by a seaward-sloping pine plain, where the surface is covered in dry watercourses with underlying Jurassic sediments consisting of shell sandstone and impervious clays. It supports grassland and stunted vegetation with a substantial risk of soil erosion. The project area is located within the foot plateau, characterized by undulating terrain and altitudes between 60 and 135 masl.

The Coastal Range Zone has a distinct low range of sandstone hills of about 150 m to 420 m high. These hills (peaks) include Daka, Wacha, and Gaabo in the North-West, Simba, Kiwara, and Jibana in Kilifi area; and Mazeras and Mwangea in Kaloleni. This zone has good rainfall and fertile soils, containing some of the best farming areas in the County. This hinterland forms the rangelands of Coast region.

The Nyika Plateau occupies the lower-lying ground along the western side of the County. It accounts for about 60% of land within the County. It has gently undulating terrain, which drops from 300m to 180m above mean sea level. It is overlain by sandstone and poor soils. The zone ranges from semi-arid to arid, with little basis for rain-fed crop farming. It is mainly suited for livestock development and pineapple or horticultural crop production.

3.2.3 Soil and Geology

The geology of Kilifi consists of sediments and sedimentary rocks of several types; the Jurassic systems, the tertiary system and the quaternary system and each of these units has several formations. The sedimentary rock systems are parallel to the coastline in a north East - Southwest direction. The sediments found in Kilifi were deposited at various stages of geological history.

The soils within the project area is divided into:

- **The Coastal Plain** with shallow to moderately deep soils (developed on coral limestone, sandy and clayey, and very deep sandy and loamy sandy soils developed on coastal sands of windblown and lagoonal origin (mainly Lithosols, ferric Acrisols and dystric Nitosols)
- **The Coastal Uplands** with a large variety of soils, developed on five different parent rock formations viz:

- Magarini sands, which are extremely well drained, very deep* sandy clay soils (mainly rhodic Ferralsols and dystric Nitosols)
- Jurassic shales with shallow and moderately deep heavy clay soils (mainly chromic Luvisols and chromic Vertisols)
- Kambe limestone, with well drained with deep to very deep friable clays (mainly eutric Nitosols and ferric Acrisols)
- Hazeras sandstone, with well drained sandy loamy and clayey soils (mainly ferraiic Arenosols and dystric Nitosols)
- Mariakani sandstone, with well drained sandy and loamy soils (mainly ferric Acrisols and dystric Nitosols)

- **The Erosional Plain** with clayey and sandy soils,developed from Pleistocene bay sediments. The soils of the erosional plain are deep sandy or sandy with a clayey saline or sodic subsoil, and saline heavy clay soils (respectively ferralic Arenosols, solodic Planosols and orthic Solonchaks)
- **The Alluvial Plains** with poorly drained heavy clay soils with vertic properties (mainly pellic Vertisols)
- **Miscellaneous landforms** like tidal flats and swamps (thionic Fluvisols) ,sand dunes (cambic Arenosols),alluvial fans (dyatric Cambieols) and valley bottoms with a variety of poorly drained soils.

3.2.4 Climatic Conditions

Kilifi County has a bimodal rainfall pattern with average annual precipitation ranging from 300 mm in the hinterland to 1,300 mm in the coastal belt. The coastal belt receives an average annual rainfall of about 900 to 1,300 mm while the hinterland receives average annual rainfall of about 300 to 900 mm. The short rain season is experienced in the months of October, November and December while the Long rains are experienced in the months of March–April and May. The short rains are important to the hinterland for pasture regeneration and water recharge while the long rains are important in the coastal area for crop production.

The annual mean evaporation ranges from 1800 mm along the coastal strip to 2200 mm in the Nyika plateau in the hinterland. The highest evaporation rates are experienced during the months of January to March. The annual temperatures range from 21 to 30°C in the coastal belt and between 30 and 34°C in the hinterland. The county experiences a very significant wind field with relatively moderate wind speeds ranging from 4.8 Km/h along the coastal strip to 12 km/h in the hinterlands

3.3 Socio Economic information of the Project Area

3.3.1 Administration

The project area is located within Lango Baya, Jilore and Goshi Locations (Kakuyuni sublocation is in Goshi location).

Figure 3.2: Map showing the administrative units within the project area

(2nd Baricho-Kakuyuni Design Report, SARI/SGAP/GATH JV, August 2021)

3.3.2 Population

(a) General

The population growth pattern for the study area (areas served from Kakuyuni tanks) has been undertaken taking into consideration the historical intercensal growth rates and projected based on the 2019 National Population data to estimate the future growth.

Demographic data from the Kenya National Bureau of Statistics (KNBS) for the Census years has been analyzed to establish growth trends in population size in the Study Area as presented in Table 3-1 below

Table 3-1: Intercensal Growth Rates (1969- 2019) – Census Report 2019

Census Period	1969- 1979	1979 - 1989	1989 -1999	1999 - 2009	2009 -2019
National Growth	3.4%	3.4%	2.9%	3.0%	2.2
Coast Province Growth	3.5%	3.1%	3.1%	2.9%	3.87

Due to changes in the administrative units of Kenya, the Coast Province is no longer in place but has been replaced by the six counties of Taita Taveta, Kwale, Mombasa, Kilifi, Lamu and Tana River with a combined population of 4,329,474. The Counties were established in Kenya and came into effect in 2013. The intercensal growth rate for the former Coast Province between year 2009 and 2019 has been calculated as 3.87% which is the highest since 1969.

(b) Project Specific Areas Population Projection

The Population growth rate between 2009 and 2019 for the project urban areas has been derived based on the National 2009 and 2019 population census data as presented in Table 3-2 below.

Table 3-2: Growth Rate Between Year 2009 to 2019

	Population		Growth Rate (%)		
	2009	2019	Project Area	National	Coast province
Watamu	10,030	27,857	10.75	2.2	3.87
Malindi	84,150	119,859	3.60	2.2	3.87
Kilifi	44,257	74,270	5.31	2.2	3.87
Average			6.56		
Marereni	5,949	7,085	1.76	2.2	3.87

Although the National growth rate shows a declining trend, the same cannot be said about the project area and the entire coast region which has seen high growth between year 2009 and 2019. According to Kilifi County Integrated Development Plan (CIDP) 2018 -2022, the population estimates growth rate is at 3.05% up to year 2025. Similarly, the Mombasa County Integrated Development Plan, projects the population to grow from 939,370 in year 2009 to 1,433,689 at year 2022 representing a growth rate of 3.31%. This is an indication that population growth for the Coast region is higher than the National average of 2.2%, (*Census Report 2019*).

3.3.3 Health

Baricho - Kakuyuni has limited access to public healthcare with two government owned facilities: Bao Lala Health Centre and Marikano Dispensary. All referral cases are taken to Malindi Sub County Hospital. In addition to the public health centres, the area is also served with private facilities, the most prominent being Tafiq Hospital.

The HIV prevalence among women in the county is higher (10.7%) than that of men (4.6%), indicating women are more vulnerable to HIV infection than men in the County.

3.3.4 HIV/AIDS Prevalence

The HIV epidemic continues to disproportionally impact the socio-economic spectrum of the entire county. The county has HIV prevalence of 4.5%. However, sub counties such as Malindi, Kilifi North and Kilifi south have an average of over 10% in HIV prevalence. The county thus is grappling with the rapid increase in the new infections amongst adolescents and young people. This exemplified by the fact that over 50% of new HIV infections occur amongst adolescents and young people aged between 15-24 years. Multiple factors including the tourism industry, drug and substance abuse, peer influence, risky sexual behaviors and inadequate employment opportunities drive HIV/AIDS new infections among young men and women in the county. By December 2015, 31,630 people were living with HIV and over 19% were adolescents and young people aged 15-24 years. Significant to note is the fact that the reduction in AIDS related deaths and the increase in new infections amongst adolescents and young people has significantly increased the total number of Persons living with HIV (PLHIV), translating into an increased treatment burden for the county. Most of the HIV financing by both the county government and development partners has been redirected to care and treatment programs which have result to improved health outcomes of PLHIV (KENPHIA, 2018).

3.3.5 Transport and communication

The roads in Baricho - Kakuyuni are currently under the jurisdiction of the Kenya Rural Roads Authority (KeRRA). The major road in the area is the Malindi-Salgate road of bitumen standard.

The first nine 9km of the pipeline will be laid on the already acquired Coast Water Works Development Authority wayleave, then joins the C103 just before the Kakoneni Centre. Then proceeds along the C103 to the proposed Kakuyuni reinforced concrete Reservoir.

Figure 3-2: Map showing the road Networks within the Project Area

(Source: Google Maps:

https://www.google.com/maps/place/Baricho+Bridge/@-3.0527752,39.5589958,10.3z/data=!4m5!3m4!1s0x183e173ad72e4cd9:0xf05cc1e95e37fc9b!8m2!3d-3.1219679!4d39.7726016)

3.3.6 Ethnicity

The Giriama community of Mijikenda are the dominant community in the project area. Other ethnic communities such as the Kikuyus, Kambas and Luos also form part of the population.

3.3.7 Water and sanitation services

The project area receives its water from the Baricho well fields. This water supply is however inadequate to meet the demands of the area, which is mainly because of the growing population overwhelming the old infrastructure. A summary of the water demand for the project area is as presented in Table 3-3 below.

The proposed improvements on the water supply network being conducted under this project will yield improved water supply.

Access to basic sanitation facilities remains a formidable challenge across the county. The county toilet coverage is estimated at 67% while 30% of households have hand-washing facilities. A significant proportion of the population in the county has no access to basic sanitation facilities, posing serious public health implications. More importantly, proportion of households with access to sanitation facilities varies across and between major urban centers and peri-urban areas and the concentration of these facilities tends to decline towards the rural areas within the county. Concerted efforts should be put in place to invest in public toilets in major towns and trading centers and establishing of sewerage facilities in coherence with existing town planning principles. (Kilifi County Integrated Development Plan 2018- 2022).

Table 3-3: Summary Water Demand Projection

(2nd Baricho_Kakuyuni Design Report – SARI/SGAP/GATH, August 2021)

	2020	2023	2025	2030	2032	2035	2040	2042
Malindi	15,477	17,210	18,471	22,044	23,660	26,308	31,397	33,698
Watamu	4,567	5,532	6,287	8,654	9,288	10,328	12,325	13,229
Kilifi	10,615	12,394	13,743	17,791	19,095	21,233	25,340	27,197
Gongoni/ Marereni	6,159	6,574	6,866	7,656	7,996	8,723	9,726	9,940
Total	**36,818**	**41,710**	**45,366**	**56,145**	**60,039**	**66,592**	**78,788**	**84,064**

3.3.8 Culture

The project area and Kilifi County area in general is a multicultural, made up of primarily the, Mijikenda, Waswahili among other tribes from the entire country. The area has a rich history that feeds into its culture.

3.3.9 Education

Education ensures that a population is empowered both socio-economically and politically so that they can participate in gainful activities and make informed decisions. The county has 935 pre-schools, 492 primary schools, 120 secondary schools, 13 youth polytechnics, one college (KMTC-Kilifi) offering medical trainings and Pwani University, Mount Kenya University, University of Nairobi and Moi University are institutions of higher learning offering various courses. There is need to improve the physical conditions of the existing institutions and build more to ensure quality and access to education (Kilifi County CIDP 2013-2017)

The project area has 7 secondary schools all of which are public; 9 primary schools, 8 of which are public and 1 private and 2 tertiary institutions.

Being a rural area; the levels of education are relatively low, with majority of the population having achieved primary and secondary education. However, there is a high dropout rate due to early marriages or lack of interest of parents to invest in education, particularly in the informal areas forcing some youth to seek casual jobs and being vulnerable to poverty.

3.3.10 Land Tenure and ownership

In Kilifi County, landlessness is a challenge to some households. It is estimated that 11.3 per cent of the households in the county are landless according to the data available in the lands office. Many of these people are squatters on privately owned land. 50% of the residents in the project area own some acreage of land and possess title deeds (Within Kakoneni) the other half of the residents (mostly in Lango Baya) don't have title deeds. The area is both moderately and in some areas sparsely populated. Majority (67%) of the households within these areas reported to have

lived in their lands for over 12 years. Average land holding capacity per household within the area ranges between one (1) and three (3) acres

3.3.11 Gender Based Violence (GBV)

Gender-based violence can include sexual, physical, mental and economic harm inflicted in public or in private. It also includes threats of violence, coercion and manipulation. This can take many forms such as intimate partner violence, sexual violence, child marriage, female genital mutilation and so-called 'honor crimes'. The consequences of gender-based violence are devastating and can have life-long repercussions for survivors. It can even lead to death.

Within the project area the most common form of GBV as highlighted by the local administration is socio economic violence. Women and young girls are not allowed to earn a living and are expected to stay at home and take care of the families. School going girls are forced into early marriages, denying them a chance to empower themselves.

The local administration and other local based NGO's are in the fore front in advocacy to abolish these acts but some form of resistance is still felt.

The project area being a rural set up is one of the assumptions given as to why there might still be some resistance against empowering the women of that community.

3.3.12 Sources of energy

Only 2% of residents in Kilifi County use liquefied petroleum gas (LPG), and 8% use paraffin. 67% use firewood and 21% use charcoal. Firewood is the most common cooking fuel by gender with 65% of male headed households and 73% in female headed households using it. The number of trading Centres connected with electricity is expected to increase as the Country continues to implement the Rural Electrification Programme which is aimed at connecting rural Centres with electricity so as to promote wealth and employment creation (Republic of Kenya, First Kilifi County Integrated Development Plan 2018- 2022).

3.3.13 Housing

National Housing Survey (2013) indicates that iron sheets usage for roofing, in Kilifi County, is at 43.7% and that of grass/Makuti is at 53%. Wall construction using stones/blocks/bricks is at 30% and it is mostly in urban areas while mud/wattle wall construction is at 48%, mostly in rural areas. Most houses, 67%, have earthen floors while 30 % have cemented floors. Housing types are primarily determined by various factors including availability and cost of construction materials, weather and cultural/religious believes in the regions. In the rural areas, houses are simple and small in sizes, generally 1 to 3 rooms per unit. On the other hand, Swahili houses, bungalows, mansionettes and flats are very common. However, presence of shanties is very common in the urban areas (Republic of Kenya, County Integrated Development Plan 2018- 2022).

3.4 Biological Environment

There will be minimal disturbance during the construction and operation phase; this is will be as a result of pipe laying which will require bush clearing. The shrubs which are along the wayleave will be destroyed and animal life including but not limited to birds and insects may be disrupted since the natural habitat will be compromised. Although section of the proposed pipeline will utilize the section of C103 road reserve that cuts across Arabuko Sakoke forest national reserve, there is no anticipated direct impact to the forest.

Arabuko-Sokoke forest is made up of three different forest types (Biodiversity Status of Arabuko Sokoke Forest.Kenya, 2017);

1. **Cynometra-dominated forests and thickets:** These cover more than half of Arabuko-Sokoke Forest Reserve. Sightings of Caracal, Civet, Genet, Suni and other mammals are more common on tracks in this forest type. Sokoke Scoops Owls are also found here.
2. **Brachystegia-dominated woodlands**: Also known as Miombo woodlands, this forest type is airy and beautiful to walk through. Birds and butterflies are more visible here due to the open canopy.
3. **Mixed Forests:** Dominated by species like Hymenaea verrucosa and Manilkara sansibarensis. The dense vegetation in this forest type creates a tropical atmosphere as one walks or drives through, the real feel of being “in the woods”. Animals commonly sighted here include the Golden-rumped Elephant Shrew, East Coast Akalat and Tiny Greenbuls.

Wildlife in Arabuko-Sokoke include;

1. **Mammals:** The forest has 40 recorded mammal species including African Elephant, African Buffalo, African Civet, Caracal, Syke’s Monkeys, Yellow Baboons and Lesser Galago (or bushbaby). Some of Kenya’s rarest mammals are found here, including the Golden-rumped Elephant-shrew, Sokoke Bushy-tailed Mongoose and Ader’s Duiker.
2. **Birds:** There are over 270 species of birds recorded in the forest including several rare and endemic species. The Clarke’s Weaver is only found in Arabuko-Sokoke and another area 30 kms further north of Arabuko-Sokoke in the whole world. Other globally threatened bird species found in Arabuko-Sokoke include: Amani Sunbird, East Coast Akalat, Sokoke Scops Owl, Sokoke Pipit, and the Spotted Ground Thrush. Other birds restricted to Kenyan coastal forests are found the most easily in Arabuko-Sokoke, making it a great place to visit.
3. **Reptiles & amphibians:** The forest has 49 reptile and 25 amphibian species.

CHAPTER 4 : ANALYSIS OF PROJECT ALTERNATIVES

4.1 Overview

Regulation 18(1) of Legal Notice 101 specifies the basic content of an Environmental Impact Assessment Study / Project Report subsequent to which, subsection (i) requires an analysis of alternatives. Analysis of project Alternatives requires comparison of feasible alternatives for the proposed project in terms of: project site, project technology, Potential Environmental and Social Impacts, capital and recurrent costs, suitability under local conditions, and acceptability by neighbouring land users.

This chapter describes and examines the various alternatives considered during the design of the project. The consideration of alternatives is one of the proactive sides of environmental and social assessment required to enhance project design. This is achieved through examining options instead of only focusing on the more defensive task of reducing adverse impacts of a single design option.

The alternative that was considered for the project was focused on:

- No-action" Alternative
- Relocation Alternative
- Fundamental alternative
- Incremental alternative
- The Proposed Development as described in the ESIA Report

4.2 No action Alternative

This alternative describes a situation where the proposed projects will not be put up. It is advantageous in that there will be no negative impacts to the environment.

The no-action alternative will, however, lead to the following (general) major negative and long-term impacts:

i. The targeted populations (in Malindi, Watamu, Kilifi and Gongoni towns and their surrounding environs of Kilifi County) will not benefit from improved water services.
ii. Women and girl child will continue having the burden to collect water
iii. No new employment will be created if the proposed intervention is not implemented. Creation of employment opportunities is expected to arise during construction as well as the operation phase of the project.
iv. Improved Hygiene and Sanitation standards will not be attained in the project target areas. Good Hygiene and Sanitation Standards are directly linked to provision of reliable and adequate water supply as well as provision of adequate sanitation facilities.
v. There will be no increased local income from sale of construction materials from their firms and also renting spaces for camp sites

vi. There will be no economic growth in the target project area if the project is not implemented since no use of locally available materials during the construction phase for example cement and pipes that can be purchased in the area

The No Project alternative is therefore not a viable alternative to adopt for this project, this is due to the fact that implementing the proposed water supply project LOT 1 - Transmission Pipeline from Baricho to Kakuyuni Tanks Project is linked with benefits such as relieving the target population in Malindi, Watamu, Kilifi and Gongoni towns and their surrounding environs of Kilifi County from water problems, creation of employment amongst other benefits.

4.3 Relocation Alternative

This option is based on the criteria that the proposed development is to be established on public land and road reserve. The proposed site is free from encroachment hence no compensation is required. A shorter route for the pipeline can be used but this would result to transverse of the pipelines in to private property leading to interference livelihood and the need to acquire land for the project. Acquisition of land will increase the cost of the project and also timelines since the proponent will have to source for compensation packages for the affected households as well as make prolong the implementation period as a resettlement action plan will need to be prepared and implemented before civil works can commence.

The ESIA processes established that the project is not out of character from the surrounding. Therefore, the proposed development cannot be an impediment to any other developments since it is an existing system and the proposed project is an extension and improvement of the already existing system with an available and reliable water source. There are no physical, biological, cultural and socio-economic features of special concern at the site.

If this option is selected the proponent need to acquire land for the project. Acquisition of land will increase the cost of the project and also timelines since the proponent will have to source for compensation packages for the affected households as well as make prolong the implementation period as a resettlement action plan will need to be prepared

The processes of designing and planning will have to be started over again. The proponent will need to re-engage professionals like Engineers, geologists, architects, ESIA experts, land surveyors and physical planners to assess the viability of the new site. Additional costs will arise from the design and approval of the building plans for the new site.

No other site will be ideal for implementation of the proposed projects, as the proposed project also involves rehabilitation works of existing system.

4.4 Fundamental Alternative

Fundamental alternatives are developments that are totally different from the proposed project and usually involve a different type of development on the proposed site, or a different location for the proposed development. The proposed project targets laying of pipelines and construction of a tank at Kakuyuni Boys Secondary School.

The ESIA team assessed the target population need of the project and found out that they needed this basic commodity and are already waiting for the implementation of the proposed project.

CWWDA had an option of abandoning the existing system and construction of a new system or rehabilitating the existing system and construction of a new system. Constructing a new system and abandoning the existing system that can be rehabilitated and increase water supply imply that funds are badly spent as the existing system has room for supplying water to the villages along the proposed routes, further villages along the proposed routes will have to be supplied water from the new system and this will reduce pressure hence affect water provision to the proposed target beneficiaries

The fundamental alternative of abandoning the existing system *other than implementing the scope of works as descripted for the proposed water supply project LOT 1 - Transmission Pipeline from Baricho to Kakuyuni Tanks is therefore not feasible in this instance. For this reason, no alternatives will be considered.*

4.5 Incremental Alternatives

Incremental alternatives are modifications or variations to the design of a project that provide different options to reduce or minimize environmental impacts. There are several incremental alternatives that can be considered, including: the design, layout of the activity, the technology and/or materials to be used in the activity.

4.5.1 Alternative construction materials and technology

The proposed project will be constructed using modern, locally and internationally accepted materials to achieve public health, safety, security and environmental aesthetic requirements. Equipment that saves energy and water will be given first priority without compromising on cost or availability factors. The use of use steel pipes was recommended as they have a high strength, lighter and easier to handle and install than Ductile Iron. Steel pipes are locally manufactured with be specified to include polyethylene coating as additional protection from corrosion.

HDPE pipes would have to be imported for diameter greater than DN 800mm. Ductile iron pipes would also have to be imported.

The construction materials for the reservoir comprising of reinforcement steel, cement, sand and ballast will be sourced locally.

4.6 Proposed Development as described in the ESIA Report

The proposed project will involve:

- Installation of additional Electromechanical works at the Baricho water works – installation of pumps, surge vessels and associated electrical works;
- Laying of a water pipeline rising main from Baricho water works to Kakuyuni reservoir. The pipeline will be DN 800mm, steel pipeline, 29km and will be laid mainly along the road reserve of C103;
- Construction of a new water reservoir of capacity 5,000 m^3 at Kakuyuni. The reservoir will be sited next to the existing water tank and the proposed site belong to Kakuyuni High school;
- Rehabilitation of the existing system – replacement of non-functional valves and the associated fittings along the existing DN 600mm Baricho – Kakuyuni pipeline.

The impacts and mitigation measures for this alternative are discussed in detail throughout this report. The positive impacts have been identified. This alternative will have minimal impacts on the physical environment and has considered the necessary measures to eliminate the identified issues of concern. The alternative is likely to have the greatest implications on socio-economic environment of the area and surrounding communities. Due to the proposed quality of the development, it is anticipated that it would provide a major opportunity for area development, employment opportunities via business environment and accessibility to services to both the residents and non-residents of the area. In addition, a development of this nature will add to the locality's ability to fuel the growth and development of the wider environment.

The Merits of this alternative are as follows:

- There will be stable and reliable water supply
- The property (land) value will appreciate;
- Optimal economic and spatial land-use;
- Visual and aesthetic amenities will be improved;
- The community will have potential source of income through the supply of materials at the site, self- sustainability, employment opportunities and better service delivery in the long run;
- The local and national economies will improve from the revenue collected from the sale of water.

Implementation of the proposed water supply project LOT 1 - transmission pipeline from Baricho to Kakuyuni Tanks was considered to be the most feasible scenario because of the following reasons

i. **Utilization of Existing Infrastructure:** there is room for pipe laying within the existing road

reserve

ii. **Project Layout Route and Resettlement:** The project route from Baricho Water Works to the proposed water tank at Kakuyuni Boys Secondary School will utilize the road reserve that is free from encroachment. A Resettlement Action Plan screening report is presented separately. From the assessment there is no displacement hence, no resettlement impacts will be triggered by the proposed project.

iii. **Land Acquisition and Resettlement:** Kakuyuni Boys Secondary School is a Public School and the management has no objection to construction of a tank at the proposed site. The site is free from encroachment. A Corporate Social Responsibility (CSR) for the school will be undertaken. This will involve construction of a fully furnished modern library for the school

iv. **Alternative Energy source for pumping-has been included**: The proposed project has future plan for solarisation of the pumping (see section 2.3.4). This is not only a cleaner source of energy than the one from national grid (which is from diverse sources including thermal) but also cheaper in the long run

From the above analysis of alternatives, the 'Proposed Project' is the most valid option that should be adopted since it has more positive environmental and social impacts to the environment and the community in the project area as a whole with minimal negative impacts that can be minimized or avoided with the implementation of the proposed mitigation measures in the ESMMP

CHAPTER 5 : POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

5.1 Introduction

Development of infrastructure projects is dealt with under several laws, By-laws, regulations and Acts of parliament, as well as policy documents and it is not possible to bring all these statutes under one heading. This chapter therefore outlines the policy, legal, regulatory and institutional framework for Environmental Management in Kenya which calls for compliance by all development projects.

5.2 Environmental Policy Framework

5.2.1 National Land Policy

Chapter 2 of the policy is linked to constitutional reforms; regulation of property rights is vested in the government by the Constitution with powers to regulate how private land is used in order to protect the public interest. The Government exercises these powers through compulsory acquisition and development control. Compulsory acquisition is the power of the State to take over land owned privately for a public purpose. However, the Government must make prompt payment of compensation.

Chapter 4 of the land policy under Environmental Management Principles, the policy provides actions for addressing the environmental problems such as the degradation of natural resources, soil erosion, and pollution. For the management of the urban environment, it provides guidelines to prohibit the discharge of untreated waste into water sources by industries and local authorities; it also recommends for appropriate waste management systems and procedures, including waste and wastewater treatment, reuse and recycling.

The policy goes further to advocate for environmental assessment and audit as a land management tool to ensure environmental impact assessments and audits are carried out on all land developments that may degrade the environment and take appropriate actions to correct the situation. Public participation has been indicated as key in the monitoring and protection of the environment. Chapter 4 further advocates for the Implementation of the polluter pays principle which ensures that polluters meet the cost of cleaning up the pollution they cause, and encourage industries to use cleaner production technologies.

Relevance

The project proponent shall implement the ESMP to ensure that the environment within project area and adjacent areas is not polluted by the subsequent activities during construction and operational phases. Health and safety measures will have to be maintained with the proximity to affected rivers.

5.2.2 Kenya Vision 2030

Kenya Vision 2030 is the national development blueprint for period 2008 to 2030 and was developed following on the successful implementation of the Economic Recovery Strategy of Wealth and Employment Creation which saw the country's economy back on the path to rapid growth since 2002. GDP growth rose from 5.3% to 5.4% in 2020, but dropped to 5.1 in 2021 (KNBS 2021)

The Kenya Vision 2030 aspires for the country firmly interconnected through a network of roads, railways, ports, airports, water and sanitation facilities and telecommunications. According to Vision 2030, Kenya is a water scarce country. The economic and social developments anticipated by Vision 2030 will require more high-quality water supplies than at present. The country, therefore, aims to conserve water sources and start new ways of harvesting and using rain and underground water. The 2030 Vision aims at ensuring that water and sanitation is improved, available and accessible to all.

Relevance

The proposed project is in line with the vision 2030 as it will lead to improved water availability in the target population in Malindi, Watamu, Kilifi and Gongoni towns and their surrounding environs including communities along the pipeline route of Lango Baya, Kakoneni, Jilore and Kakuyuni centers of Kilifi County

5.2.3 National Gender and Equality commission Act 2011

This Act establishes the National Gender and Equity Commission, a successor of the Kenya National Human Rights and Equality Commission, with the objectives of promoting gender equality and freedom from discrimination. The over-arching goal for of the Act is to contribute to the reduction of gender inequalities and the discrimination against all; women, men, persons with disabilities, youth, children, the elderly, minorities and marginalized communities.

Relevance

In his requirement to hire the local labour, the contractor will be obligated to hire his workforce in a gender sensitive way that includes and promotes equal opportunities for both men and women.

5.2.4 National Gender and development Policy

The National Gender and Development Policy provide a framework for advancement of women and an approach that would lead to greater efficiency in resource allocation and utilisation to ensure empowerment of women. The National Policy on Gender and Development is consistent with the Government's efforts of spurring economic growth and thereby reducing poverty and unemployment, by considering the needs and aspirations of all Kenyan men, women, boys and girls across economic, social and cultural lines. The policy is also consistent with the Government's

commitment to implementing the National Plan of Action based on the Beijing Platform for Action (PFA). The overall objective of the Gender and Development Policy is to facilitate the mainstreaming of the needs and concerns of men and women in all areas in the development process in the country.

Relevance

This law will be of relevance to the contractor in ensuring that all genders are given an equal opportunity during recruitment during the construction phase and operation phase of the project. The employers will also provide adequate facilities for all genders within the project site.

5.2.5 National Environment Policy (NEP)

Sessional Paper No. 6 of 1999 on Environment and Development since adoption by parliament in 1999 has been in use and influenced the formation of EMCA 1999 as amended in 2015 but has since been surpassed by time and is therefore under revision to comprehensively cover areas that were previously left out to augment it.

The revised draft of the National Environmental Policy, dated April 2012, sets out important provisions relating to the management of ecosystems and the sustainable use of natural resources, and recognizes that natural systems are under intense pressure from human activities particularly for critical ecosystems including forests, grasslands and arid and semi-arid lands. The objectives of the Policy include developing an integrated approach to Environmental management, strengthening the legal and institutional framework for effective coordination, promoting environmental management tools.

Relevance

The Project shall implement the Environmental and Social Management and Monitoring Plan (ESMMP) to mitigate the impacts of the resulting impacts during the construction and operational phases of the Project; this will ensure that the sensitive ecosystems are not destabilized by the subsequent Project activities.

5.2.6 HIV and AIDS Policy 2009

The policy identifies HIV/AIDS as a global crisis that constitutes one of the most formidable challenges to development and social progress. The Pandemic heavily affects the Kenyan economy through loss of skilled and experienced manpower due to deaths, loss of man hours due to prolonged illnesses, absenteeism, reduced performance, increased stress, stigma, discrimination and loss of institutional memories among others. Due to the large of number of workers who will be involved in the project and the associated social issues with projects of such a scale, HIV/AIDS has been considered as one of the proposed risks, but adequate mitigation measures have also been proposed to that effect. This policy shall provide a framework to both the project proponent and contractor to address issues related to HIV and AIDS. In Summary, the policy provides a mechanism for:

- Setting Minimum Internal Requirements (MIR) for managing HIV and AIDS
- Establishing and promoting programmes to ensure non-discrimination and non-stigmatization of the infected;
- Contributing to national efforts to minimize the spread and mitigate against the impact of HIV and AIDS;
- Ensuring adequate allocation of resources to HIV and AIDS interventions;
- Guiding human resource managers and employees on their rights and obligations regarding HIV and AIDS.

Relevance

The Policy will be complied with during implementation of the Project; the proponent will in cooperate in tender document, requirement for the contractor to provide condoms both male and female in the sanitary facilities and various locations for the members of public; given workers regular leave, preferably monthly to cool off period and join their families, Sensitize workers on the need to refrain from risky behaviours; provide HIV/AIDS awareness training and VCT/HCT services ,to staff and the locals and monitor the efficacy of the awareness created during construction of the project and to provide unskilled labour force to the locals to minimize labour influx.

5.2.7 National Gender Policy 2011

The overall goal of this Policy Framework is to mainstream gender concerns in the national development process in order to improve the social, legal/civic, economic and cultural conditions of women, men, girls and boys in Kenya.

The policy provides direction for setting priorities. An important priority is to ensure that all ministerial strategies and their performance frameworks integrate gender equality objectives and indicators and identify actions for tackling inequality. In addition, each program will develop integrated gender equality strategies at the initiative level in priority areas. Within selected interventions, the policy will also scale-up specific initiatives to advance gender equality.

Relevance

This policy will be referred to during project implementation especially during hiring of staff to be involved in the project, procuring of suppliers and sub consultants and sub-contractors to the project. The contractor will have to ensure inclusivity of both men and women during recruitments.

5.2.8 Kenya Youth Development Policy 2018

This policy is designed to scale up youth empowerment interventions as well as the youths' value contribution to nation building. The priorities that are set out in the policy are: alignment of the youth programmes to the Big Four Agenda of Government (2018-2022), Kenya Vision 2030 and

its Medium-Term Plans, the Constitution (2010) and the Sustainable Development Goals (SDGs) (2030). Its main objective is to mainstream youth issues in all sectors of national development, on both the micro and macro levels, at national and county levels, within the public, private sectors, families and civil society.

Relevance

The project should ensure that youth are given priority to participate in the project through employment and delivery of goods and services.

5.3 Overview of Relevant Legislation

5.3.1 Constitution of Kenya

Article 42 of the Kenyan Constitution, under the Bill of Rights, provides that every Kenyan has a right to a clean and healthy environment, which includes the right to have the environment protected for the benefit of present and future generations through legislation and other measures.

Part II of Chapter 5 of the Constitution (Environment and Natural Resources), (I) the State clearly undertakes to carry out the following:

- Ensure sustainable exploitation, utilization, management and conservation of the environment and natural resources, and ensure the equitable sharing of the accruing benefits;
- Work to achieve and maintain a tree cover of at least ten per cent of the land area of Kenya;
- Protect and enhance intellectual property in, and indigenous knowledge of, biodiversity and the genetic resources of the communities;
- Encourage public participation in the management, protection and conservation of the environment; Protect genetic resources and biological diversity;
- Establish systems of environmental impact assessment, environmental audit and monitoring of the environment;
- Eliminate processes and activities that are likely to endanger the environment

Part (II) “Every person has a duty to cooperate with State organs and other persons to protect and conserve the environment and ensure ecologically sustainable development and use of natural resources. Chapter 5 on Land and Environment emphasizes on the following:

- Land use and management shall by law benefit local communities
- Community land is protected from encroachment by State.
- Law shall protect Rivers, forests and water bodies.
- Equitable access to land.
- All lawful land rights are secured; only someone who has stolen land needs to worry.
- County governments will manage land in trust of the people according to the constitution.

Relevance

The constitution of Kenya provides for sound management and sustainable development of all of Kenya's projects, both public and private investments. It also calls for the duty given to the project proponent to cooperate with State organs and other persons to protect and conserve the environment as mentioned in Part II. The policy requires development within the water sector to be environmentally friendly. This ESIA study is addressing both the environmental and social issues by developing environmental and social management plan that will be adopted during the entire project period.

5.3.2 The Environmental Management and Coordination (Amendment) Act, 2015

The Act provides for the establishment of a legal and institutional framework for the management of the environment and for matters connected therewith and incidental thereto. Just as in the new constitution, Part II of EMCA confers to every person the right to a clean and healthy environment and to its judicial enforcement. The new Constitution and EMCA therefore obligates the project's Executing Agency and Contractor to work in a clean environment and not to contravene the right of any person within its zone of influence, to this entitlement. EMCA has provided for the development of several subsidiary legislations and guidelines which govern environmental management and are relevant to the project implementation. These include:

a) The Environmental (Impact Assessment and Audit) Regulations, 2003 and the amendments of 2009 Legal Notice No. 101

The Environmental Impact Assessment and Audit Regulations state in Regulation 3 states that "the Regulations should apply to all policies, plans, programmes, projects and activities specified in Part IV, Part V and the Second Schedule of the Act.

Part III of the Regulations indicates the procedures to be taken during preparation, submission and approval of the environmental project report.

Part 4(1) of the Regulation further states that: "no Proponent shall implement a project"

a) Likely to have a negative environmental impact; or
b) For which an environmental impact assessment is required under the Act or these Regulations, unless an environmental impact assessment has been concluded and approved in accordance with these Regulation.

Relevance

This comprehensive project report has been compiled to comply with EMCA and the Environmental Impact Assessment and Audit (Amendment) Regulations, 2019

b) The Environmental Management and Coordination (Waste Management) Regulations, 2006 Legal Notice No. 121

These Regulations were published in the Kenya Gazette Supplement No. 69, Legislative Supplement No. 37, and Legal Notice No. 121 of 29th September, 2006. The regulations provide details on management (handling, storage, transportation, treatment and disposal) of various waste streams including:

- Domestic waste;
- Industrial waste;
- Hazardous and toxic waste;
- Pesticides and toxic substances;
- Biomedical wastes; and
- Radioactive waste.

Regulation No. 4 (1) makes it an offence for any person to dispose of any waste on a public highway, street, road, recreational area or in any public place except in a designated waste receptacle. Regulation 5 (1) provides categories of cleaner production methods that should be adopted by waste generators in order to minimize the amount of waste generated and they include:

I. Improvement of production process through
   - Conserving raw materials and energy;
   - Eliminating the use of toxic raw materials and wastes;
   - Reducing toxic emissions and wastes.

II. Monitoring the product cycle from beginning to end by
   - Identifying and eliminating potential negative impacts of the product;
   - Enabling the recovery and re-use of the product where possible,
   - Reclamation and recycling and
   - Incorporating environmental concerns in the design and disposal of a product.

Regulation 6 requires waste generators to segregate waste by separating hazardous waste from non- hazardous waste for appropriate disposal. Regulation 15 prohibits any industry from discharging or disposing of any untreated waste in any state into the environment. Regulation 17 (1) makes it an offence for any person to engage in any activity likely to generate any hazardous waste without a valid Environmental Impact Assessment license issued by NEMA.

Relevance

The proposed project, during construction phases will generate wastes which will need to be disposed of as per the guidelines in the regulations.

c) The Environmental Management and Coordination (Water Quality) Regulations, 2006 Legal Notice No. 120

These Regulations were published in the Kenya Gazette Supplement No. 68, Legislative Supplement No.36, and Legal Notice No. 120 of 29th September, 2006. The Regulations provides for sustainable management of water resources including prevention of water pollution and protection of water sources (lakes, rivers, streams, springs, wells and other water sources).

It is an offence under Regulation No. 4 (2), for any person to throw or cause to flow into or near a water resource any liquid, solid or gaseous substance or deposit any such substance in or near it, as to cause pollution. Regulation No. 11 further makes it an offence for any person to discharge or apply any poison, toxic, noxious or obstructing matter, radioactive waste or other pollutants or permit the dumping or discharge of such matter into the aquatic environment unless such discharge, poison, toxic, noxious or obstructing matter, radioactive waste or pollutant complies with the standards for effluent discharge into the environment.

Relevance

The proponent should ensure that waste is handled, stored, transported and disposed as per this regulation.

d) The Environmental Management and Coordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009 Legal Notice No. 61

These regulations were published as legal Notice No. 61 being a subsidiary legislation to the Environmental Management and Co-ordination Act, 1999 as amended in 2015. The regulations provide information on the following:

- Prohibition of excessive noise and vibration;
- Provisions relating to noise from certain sources;
- Provisions relating to licensing procedures for certain activities with a potential of emitting excessive noise and/or vibrations and Noise and excessive vibrations mapping.

According to regulation 3 (1), no person shall make or cause to be made any loud, unreasonable, unnecessary or unusual noise which annoys, disturbs, injures or endangers the comfort, repose, health or safety of others and the environment. Regulation 4 prohibits any person to (a) make or cause to be made excessive vibrations which annoy, disturb, injure or endanger the comfort, repose, health or safety of others and the environment; or (b) cause to be made excessive vibrations which exceed 0.5 centimetres per second beyond any source property boundary or 30 meters from any moving source.

Regulation 5 further makes it an offence for any person to make, continue or cause to be made or continued any noise in excess of the noise levels set in the First Schedule to these Regulations, unless such noise is reasonably necessary to the preservation of life, health, safety or property.

Regulation 12 (1) makes it an offence for any person to operate a motor vehicle which (a) produces any loud and unusual sound; and (b) exceeds 84 dB(A) when accelerating. According to sub-regulation 2 of this regulation, No person shall at any time sound the horn or other warning device of a vehicle except when necessary to prevent an accident or an incident. Regulation 13 (1) provides that except for the purposes specified in sub-Regulation (2) there under, no person shall operate construction equipment (including but not limited to any pile driver, steam shovel, pneumatic hammer, derrick or steam or electric hoist) or perform any outside construction or repair work so as to emit noise in excess of the permissible levels as set out in the Second Schedule to these Regulations.

Regulation 19 (1) prohibits any person to carry out activities relating to fireworks, demolitions, firing ranges or specific heavy industry without a valid permit issued by the Authority. According to sub-regulation 4, such permit shall be valid for a period not exceeding three months.

Relevance

The contractor for civil works will be required to ensure compliance with the above regulations in order to promote a healthy and safe working environment throughout the construction phase. This shall include regular inspection and maintenance of equipment and prohibition of unnecessary hooting of vehicles.

e) The Environmental Management and Coordination (Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Regulations, 2006 Legal Notice No. 160

Part II of Regulations, section 4 states that no person shall engage in any activity that may have adverse impacts on ecosystems, lead to introduction of exotic species or lead to unsustainable use of natural resources without an EIA license. The regulation puts in place measures to control and regulate access and utilization of biological diversity that include among others banning and restricting access to threatened species for regeneration purposes. It also provides for protection of land, sea. Lake or river declared to be a protected natural environmental system in accordance to section 54 of EMCA, 2015.

Relevance

During the construction phase of proposed project, there will be minimal removal of the existing natural vegetation at the tank site where shrubs and grass was observed.

Other relevant EMCA 2015 to be considered during construction and operation of the project are;

- Environmental Management and Coordination (Wetlands, River Banks, Lake Shores and Sea Shore Management) Regulation, 2009.
- The Environmental Management and Coordination (Controlled Substances) Regulations, 2007 Legal Notice No. 73.

Relevance

EMCA 2015 and above listed regulations shall form the main statutory instruments which will guide the implementation of the project so that any likely adverse impacts that could be caused by the project are promptly mitigated as recommended in this assessment. This report is also in compliance with the requirement of the EIA/EA regulations 2003 as amended in 2019.

5.3.3 Water Act 2016

Section 73 of the Act allows a person with a license to supply water (licensee) to make regulations for purposes of protecting against degradation of sources of water which he is authorized to take. Under the Act, the licensee could be a local authority, a private Trust or an individual and the law will apply accordingly under the supervision of the Regulatory Agency.

Section 75 and sub-section 1 allows a licensee for water supply to construct and maintain drains, sewers and other works for intercepting, treating or disposing of any foul water arising or flowing upon land for preventing water belonging to the licensee or which he is authorized to take for supply from being polluted. However, if the proposed works will affect or is likely to affect any body of water in the catchment, the licensee shall obtain consent from the Water Resources Authority.

Relevance

This Act shall be relevant during both construction and operation phases of the project whereby the contractor and proponent shall ensure that all relevant water resources are not polluted from both liquid and solid wastes. There are already existing water abstraction permits and NEMA license for the Baricho well field, the source of water for the proposed project. Conditions in the available permits and licenses will be adhered to.

5.3.4 Water Rules 2007

One of the outcomes of the water sector reforms has been improved regulatory framework for water resource management and use. In addition to the Water Act 2002 now Water Act 2016, the

main document outlining the regulations is the Water Resource Management Rules 2007. The rules set out the procedures for obtaining water use permits and the conditions placed on permit holders. Sections 54 to 69 of the Water Resources Management Rules 2007 impose certain statutory requirements on dam owners and users in this regard.

Other sections within the rules imply that WRA can impose water quality sampling requirements from the water sources and impacts to the hydrology, water chemistry and river morphology downstream basin. Section 16 of the Water Rules requires approval from the Water Resources Authority (WRA) for a variety of activities that affect the water resources, including the storage of water in dams and pans. Approval by WRA is conferred through a Water Permit. A permit is valid for five years and must be renewed.

Section 104 of the Water Resource Management Rules requires certain water permit holders to pay water use charges. The intention of the water use charges was to raise revenue for water resource management, raise revenue for catchment conservation activities, improve efficiency of water resource abstraction and provide a system of data collection on water resource usage.

Relevance

The project will ensure that the riverbanks and wells are respected and are not interfered with.

5.3.5 County Government Act No. 17 of 2012

Part II of the Act empowers the county government to be in charge of functions described in Article 186 of the constitution, (county roads, water and Sanitation, Health). Part XI of the Act vests the responsibility of planning and development facilitate the development of a well-balanced system of settlements and ensure productive use of scarce land, water and other resources for economic, social, ecological and other functions across a county. This arrangement has been adopted for interventions in order not to conflict with provisions of the Kenyan Constitution.

Under section 115, (1) Public participation in the county planning processes shall be mandatory and be facilitated through; (b) Provision to the public of clear and unambiguous information on any matter under consideration in the planning process, including;

(i) clear strategic environmental assessments;

(ii) Clear environmental impact assessment reports;

(iii)Expected development outcomes; and

(iv) Development options and their cost implications.

Relevance

This ESIA has been prepared in adherences to this act, public participations were undertaken to create awareness and to obtains communities views and suggestions

CWWDA should maintain a continuous engagement with the county Government of Kilifi.

The county government of Kilifi to support the client and also issue permits relevant to the project contractor's like business permits and development approvals

5.3.6 The Physical and Land Use Planning Act, 2019

The Physical and Land Use Planning Act, 2019 is an act of Parliament to make provision for the planning, use, regulation and development of land and for connected purposes. The Act provides a vital link with the Environment Management and Co-ordination Act. For example, Section 36 of the Act states that "In connection with a development application a local authority is of the opinion that proposals for industrial location, dumping sites, sewerage treatment, quarries or any other development activity will have injurious impact on the environment, the applicant will be required to submit together with the application an environmental impact assessment report". This reinforces EIA requirements under EMCA 2015

Relevance

The Act directs, regulates and harmonizes development and use of land over the Country. The large part of the project is designed to utilize public land. This was in an effort to avoid cases of acquisition of private property and resettlement complications.

The county Government of Kilifi will need to provide necessary approvals such as approvals for Contractor's temporary facilities.

5.3.7 Occupational Health and Safety Act (OSHA 2007)

This legislation provides for protection of workers during construction and operation phases. It is tailored at implementation of the EHS plan in compliance with the relevant sections of this Act. The EMP prepared under this assessment has provided for specific health and safety aspects to be complied with during implementation of the project.

Subsection 18 - Sanitary conveniences

Sufficient and suitable sanitary conveniences for persons employed in the factory/ work places shall be provided, maintained and kept clean, and effective provision shall be made for lighting the conveniences and where persons of both sexes are, such conveniences shall afford proper separate accommodation for persons of each sex.

Subsection 21 – Prime movers

Every flywheel directly connected to any prime mover and every moving part of any prime mover, shall be securely fenced, whether the flywheel or prime mover is to be situated in an engine – house or not. Head and tailrace of every water wheel and of every water turbine shall be securely

fenced. Every part of electric generators, motors and rotary converters and every flywheel directly connected thereto shall be securely fenced unless it is in such a position or of such construction as to be safe to every person employed or working in the premises as it would be if securely fenced.

Subsection 22 -Transmission Machinery

(1) Every part of transmission machinery shall be securely fenced unless it is in such a position or of such construction as to be safe to every person employed or working in the premises, as it would be if securely fenced.

(2) Efficient devices or appliances shall be provided and maintained in every room or place where work is carried on by which the power can promptly be cut-off from transmission machinery in that room or place.

(3) Every machine intended to be driven by mechanical power shall be provided with an efficient starting and stopping appliance, the control of which shall be in such a position as to be readily and conveniently operated by the person operating the machine.

Subsection 25 - Construction and maintenance of fencing

All fencing or other safeguards provided in pursuance of the foregoing provisions shall be of substantial construction, constantly maintained, and kept in position while the parts required to be fenced or safe guarded are in motion or in use except when any such parts are necessarily exposed for examination and for any lubrication or adjustments shown by such examination to be immediately necessary.

Subsection 13 – Cleanliness

Every factory/work place shall be kept in a clean state and free from effluent arising from any drain, sanitary convenience or nuisance.

Subsection 14 – Overcrowding

A factory/ work place shall not while work is carried on be so overcrowded as to cause risk of injury to the health of the persons employed therein. Standard cubic space allowed for every person in a workroom should not be less than three hundred and fifty cubic feet.

Section 51- Air pollution

Preventive measures shall be put in place during operation of the project to prevent fumes and exhaust gases from entering into the atmosphere.

Relevance to the Project

Contractor will be required to register site as a work place with the local county directorate of occupational safety and health services (DOSHS) in line with this Act. The Act provides Occupational Health and Safety guidelines which shall be followed by both the contractor and supervising consultant during implementation of the project in order to avoid injuries and even loss of life to workers and neighbouring community.

5.3.8 Work Injury Benefits Act (WIBA)

It is an act of Parliament to provide for compensation to workers for injuries suffered in the course of their employment. It outlines the following:

- Employer's liability for compensation for death or incapacity resulting from accident;
- Compensation in fatal cases;
- Compensation in case of permanent partial incapacity;
- Compensation in case of temporary incapacity;
- Persons entitled to compensation and methods of calculating the earnings;
- No compensation shall be payable under this Act in respect of any incapacity or death resulting from a deliberate self-injury;
- Notice of an accident, causing injury to a workman, of such a nature as would entitle him for compensation shall be given in the prescribed form to the director.

Relevance

The contractor will need to abide by all the provisions of WIBA and maintain an appropriate insurance cover throughout the active construction period.

5.3.9 The Public Health Act (Cap.242)

Part IX section 115 of the Act states that no person/institution shall cause nuisance or condition liable to be injurious or dangerous to human health. Section 116 requires Local Authorities to take all lawful, necessary and reasonably practicable measures to maintain their jurisdiction clean and sanitary to prevent occurrence of nuisance or condition liable for injurious or dangerous to human health. Such nuisance or conditions are defined under section 118 and include nuisances caused by accumulation of materials or refuse which in the opinion of the medical officer of health is likely to harbour rats or other vermin.

Relevance

The Act provides guidelines to the contractor on how he shall manage all wastes (Liquid and Solid Wastes) emanating from the project in a way not to cause nuisance to the community. This Act during construction shall be read alongside the waste management regulations of EMCA 2015 for

utmost compliance. The Act also shall be applied to ensure that the food that is provided to the workers during construction of the project meets the safety requirements.

5.3.10 Employment Act

The Act declares and defines the fundamental rights of employees, to provide basic conditions of employment of employees, to regulate employment of children, and to provide for matters connected with the foregoing. The Act provides for the basic minimum conditions of employment to include hours of work, water (for use at the place of work), food (employee properly fed) and medical attention.

Relevance

At construction stage, the project contractor will hire both full-time and casual staff and the prevailing basic minimum conditions of employment will have to observed.

5.3.11 Traffic Act 2012

This Act consolidates the law relating to traffic on all public roads. The Act also prohibits encroachment on and damage of roads including land reserved for roads. This project is under the provisions of this Act as it proposed to utilize the road reserves.

Relevance

In line with the requirements of this Act, the contractor will need to install and properly maintain all the necessary road signs while implementing the project. Further the proponent will need to acquire the necessary consent before commencement of project works along the reserves.

5.3.12 Road Act, 2007

This Act provides for the establishment of the KeNHA, the Kenya Urban Roads Authority (KURA) and the Kenya Rural Roads Authority (KeRRA), and provides for the powers and functions of the authorities and for connected purposes. Section 4 of this Act specifies the function of KeNHA, specifically; Section 4(1) states that “The Highways Authority shall be responsible for the management, development, rehabilitation and maintenance of national roads.” Section 29 of this Act further indicates that in exercising the powers, an Authority shall do as little damage as possible, and, where any person suffers damage, no action or suit shall lie against the Authority, but he shall be entitled to such compensation thereof as may be agreed between him and the concerned Authority, or, in default of agreement, as may be determined by an arbitrator appointed by the Chief Justice.

Relevance

In implementing the proposed water project, the client, CWWDA and the contractor will need to ensure that no damages are done to the road and if they occur reinstatement of the road should be done in collaborations with the relevant Authority.

5.3.13 HIV Aids Prevention and Control Act (Act No. 14 of 2006)

This is an Act of Parliament to provide measures for the prevention, management and control of HIV and AIDS, to provide for the protection and promotion of public health and for the appropriate treatment, counselling, support and care of persons infected or at risk of HIV and AIDS infection, and for connected purposes.

Section 3 of the Act indicates the purpose of the legislation including public awareness and rights to people living with HIV/AIDS.

Relevance

This Act will ensure that the Contractor makes provision for VCT services for employees and locals, as well as promotes public awareness. This will go a long way in ensuring stigmatization of HIV and AIDS is reduced as well as managed during the construction period.

Public awareness shall be achieved through education, public campaigns even at workplaces. This Act's provisions then give the guidelines unto which the project shall follow in educating workers and staff and providing of incentives to combat HIV/AIDS.

5.3.14 The Sexual Offences Act 2006

This is an Act of Parliament to make provision about sexual offences, their definition, prevention and the protection of all persons from harm from unlawful sexual acts, and for connected purposes. The Act is a big step in the fight against sexual offences as it has strong punishment for criminals.

Relevant Sections in this Act include: -

- 24- Sexual offences relating to position of authority and persons in position of trust.
- 25- Sexual relationship which pre-date position of authority or trust.
- 26- Deliberate transmission of HIV or any other life threatening sexually transmitted disease.

Relevance

In the life cycle of the Project, the Act will be key in ensuring that no sexually offences are committed. The proponent and contractor shall sensitize his employees on the provisions of this Act and all persons employed under the project will be required to sign a code of conduct.

5.3.15 The Children Act ,2010

This Act protects the welfare of children within the Country. The Act identifies Children as a person below the age of 18 years old and protects them from exploitation.

Relevance

Of particular importance to this project, is section 10, which protects the child from:

- Economic exploitation (only the people above 18 years will be considered for job opportunities in the project).
- Any work that interferes with his/ her education, or is harmful to the child's health or physical, mental, spiritual, moral or social development

5.3.16 Environmental and Land Court Act (2011)

The Act gives effect to Article 162(2) (b) of the constitution by establishing the Environment and Land Court that has original and appellate jurisdiction. Per Section 4(2) and (3), it is a court with the status of the High Court. It exercises jurisdiction throughout Kenya and pursuant to section 26, is expected to ensure reasonable and equitable access to its services in every County.

The principal objective of this Act is to enable the Court to facilitate a just, expeditious, proportionate and accessible resolution of disputes governed by the Act.

The Court exercises its jurisdiction under Section 162 (2) (b) of the Constitution and has power to hear and determine dispute relating to: a) Environmental planning and protection, climate issues, land use planning, title, tenure, boundaries, rates, rates, rents, valuations, mining minerals and other natural resources; b) Compulsory acquisition of land ;c) land administration and management ; d) Public private and community land contracts, choses in action or other instrument granting any enforceable interests in land and e) any other dispute relating to environment and land.

Nothing in the Act Precludes the Court from hearing and determining applications for redress of a denial, violation or infringement of, or threat to, rights or fundamental freedom relating to land and to clean and healthy environment under Section 42, 69 and 70 of the constitution.

Relevance

Grievances encountered during implementation of the project will be resolved using the GRM proposed in Chapter 8 section 8.10 of this report. Those not satisfied will be advised to seek justice though the environmental court

5.3.17 The National Museums and Heritage Act-Cap 216 (2006)

Kenya is rich in its antiquities, monuments, cultural and natural sites which are spread all over the country and the Act aims to preserve this national heritage.

The National Museums of Kenya is the custodian of the country's cultural heritage, its principal mission being to collect, document, preserve and enhance knowledge, appreciation, management and the use of these resources for the benefit of Kenya and the world.

Through the National Museums of Kenya many of these sites are protected by law by having them gazetted under the Act.

- Section 30 of the Act requires all discoveries of buried artefacts to be reported to the NMK/GoK.

Relevance

In case of discoveries of buried artefacts reporting to the NMK/GoK will be carried out.

5.4 Institutional Structure of the Water Sector

5.4.1 National Environment Management Authority (NEMA)

The government established the National Environmental Management Authority (NEMA) as the supreme regulatory and advisory body on environmental management in Kenya under EMCA, 1999 as amended in 2015. NEMA is charged with the responsibility of coordinating and supervising the various environmental management activities being undertaken by other statutory organs. NEMA also ensures that environmental management is integrated into development policies, programs, plans and projects.

The project will be expected to get licence from NEMA following review of this report prior to commencement of any civil works.

5.4.2 Water Resources Authority (WRA)

The authority is responsible for sustainable management of the Nations Water Resources:

- Implementation of policies and strategies relating to management of water resources, Develop principles, guidelines and procedures for the allocation of water,
- Development of Catchments level management strategies including appointment of catchments area advisory committees,
- Regulate and protect water resources quality from adverse impact
- Classify, monitor and allocate water resources.

5.4.3 Water Services Regulatory Board (WASREB)

The regulatory Board is responsible for the regulation of the water and sewerage services in partnership with the people of Kenya. The mandate of the regulator covers the following key areas:

- Regulating the provision of water and sewerage services including licensing, quality assurance, and issuance of guidelines for tariffs, prices and disputes resolution.
- Overseeing the implementation of policies and strategies relating to provision of water services licensing of Water Services Boards and approving their appointed Water Services Providers,
- Monitoring the performance of the Water Services Boards and Water Services Providers,

- Establish the procedure of customer complaints,
- Inform the public on the sector performance,
- Gives advice to the Minister in charge of water affairs.

5.4.4 Water Works Development Agencies

The WWDAs are responsible for the efficient and economical provision of water and sewerage services in their areas of jurisdiction. CWWDA is among the nine agencies established under the Water Act, 2016 and is mandated to:

- Plan and develop National Public Water Works for bulk water supply;
- Formulate Development and Investment Plans in liaison with county governments;
- Provide input to the national development and financing plan; and
- Provide technical assistance to Water Service Providers for county asset development
- CWWDA is the implementing Agency in this proposed project.

5.4.6 Water Services Providers

Water Service Providers are the utilities or water companies. They are under the leadership of the County Governments but have been commercialized to improve performance and run like business within a context of efficiency, operational and financial autonomy, accountability and strategic, but minor investment. KIMAWASCO and MAWASCO are the WSPs that will be in operation and management charge of the proposed project.

5.5 Project Implementation Institutional Structure

CWWDA has established implementation units for the project with project engineers and a team of environmental and social safeguard experts in charge for various projects, the Agency hires on case by case basis the services of environment specialist to oversee implementation of the EMSP developed for projects.

I. The Contractor

The contractor will be required to establish an environmental office to continuously advise on environmental components of the project implementation. Elements in the environmental and social management plan are expected to be integrated in the project with appropriate consultations with CWWDA through the supervising environmental and social safeguard expert. The environmental and social expert officer of the contractor is also expected to fully understand the engineering and management aspects of the project for effective coordination of relevant issues.

II. **The Supervising Consultant**

The supervising Consultant will be engaged by CWWDA (as the project proponent) to ensure effective implementation of the environmental management plan. CWWDA has engaged the services of SARI/SGAPI/GATH JV to assist in supervision works.

SARI/SGAPI/GATH JV have an environmental expert who understands the details of the recommendations on environment management and especially the proposed action plans, timeframes and expected targets of the management plan. The environmental supervisor expert will also be the liaison person between the contractor and CWWDA on the implementation of environmental concerns as well as issues of social nature associated with the Project.

5.6 World Bank's Environmental and Social Standards

Like in any project financed by, or with financial participation of, the World Bank, the environmental and social safeguards as defined in the Bank's Operational Procedures (OPs) will be respected for the purposes of this project implementation. WB classifies its projects into four classifications: High Risk, Substantial Risk, Moderate Risk or Low Risk.

This particular water supply project LOT 1 - transmission pipeline from Baricho to Kakuyuni Tanks involves water supply and have significant positive effects on the environment and to the targeted beneficiaries. Adverse effects, if any, will be limited (some minor and temporally limited noise and dust during construction). Such effects can clearly be identified during the screening process and mitigated as described in EMMP and has been categorized as B.
Category B: A proposed project is classified as Category B if its potential limited adverse environmental or social risks and/or impacts that are few in number, generally site-specific, largely reversible, and readily addressed through mitigation measures.
The proposed project

The table below shows the applicability of World Operational Safeguards as it applies to this to this construction of water supply project LOT 1 - transmission pipeline from Baricho to Kakuyuni Tanks in Kilifi County.

OP	Title	Comments
4.01	Environmental Assessment	Applicable. As a result of social screening, (Annex 7) the project was identified as a Category B project due potential limited adverse environmental or social risks and/or impacts that are few in number, generally site-specific, largely reversible, and readily addressed through mitigation measures and other activities, as described
4.04	Natural Habitats	Not applicable.
4.09	Pest Management	Not applicable.

OP	Title	Comments
4.10	Indigenous Peoples	Not applicable.
4.11	Physical Cultural Resources	Not applicable. Several site visits conducted have not indicated the presence of any cultural (historical, archaeological) sites in the construction area. However, to manage "chance finds" an appropriate procedure is included in this ESIA (Annex 4). Such procedure to be followed by contractors during the construction phase.
4.12	Involuntary Resettlement	Not applicable
4.36	Forests	Not applicable.

The relevant International Labour Organization (ILO) Conventions that will be applicable to the Project are listed below:

1. ILO Convention 87 on Freedom of Association and Protection of the Right to Organize
2. ILO Convention 98 on the Right to Organize and Collective Bargaining
3. ILO Convention 29 on Forced Labour
4. ILO Convention 105 on the Abolition of Forced Labour
5. ILO Convention 138 on Minimum Age (of Employment)
6. ILO Convention 182 on the Worst Forms of Child Labour
7. ILO Convention 100 on Equal Remuneration
8. ILO Convention 111 on Discrimination (Employment and Occupation)
9. UN Convention on the Rights of the Child, Article 32.1
10. UN Convention on the Protection of the Rights of all Migrant Workers and Members of their Families

The Project Contractor shall observe the Standard as presented in the ESMMP of the project to be enforced under the Works Contract.

CHAPTER 6 : PUBLIC PARTICIPATION AND STAKEHOLDER CONSULTATIONS

6.1 Background to public consultation in ESIA

Timely, well-planned and implemented public involvement and consultation is a vital component of a successful ESIA study. The Constitution of Kenya, 2010 provides that every Kenyan has the right to have the environment protected for the benefit of the present and future generations through legislation and other measures. Article 10 and 69 of the Constitution recognizes public participation as a principle of governance and gives the state a responsibility to encourage public participation in the management, protection and conservation of the environment.

According to EMCA and Environmental (Impact Assessment and Audit) (amendment) Regulations, 2019 beneficiaries and members of the public living within new or improvement project sites (both public and private) are consulted to seek their views and opinions regarding the projects before they are implemented. Consultative Public Participation is therefore an important process in ESIA studies.

Community consultation and participation ensures that communities and stakeholders are part and parcel of the proposed developments and in so doing assures the sustainable use of resources. It has also demonstrated successfully that projects that go through this process will acquire high level of acceptance, identify possible conflicts areas early, and accrue benefits to a wider section of the society. Public consultations form a useful component for gathering, understanding and establishing likely impacts of projects determining community and individual preferences and selecting alternatives.

Furthermore, through public participation, it is possible to enhance project designs and ensure sustainability of the projects. The proposed project has incorporated public consultations in order to understand the local impacts, needs and thoughts and eventually incorporate them into the final designs and operations of the project.

6.2 Benefits of Public Consultation

3.4.1 Benefit to the Developer

- The developer is likely to benefit from local knowledge
- Costs may be saved as key issues are identified by the public and studies are focused on key issues as opposed to a broad range of issues;
- Measures to reduce adverse impacts and enhance benefits will be identified with stakeholders;
- Relations with the communities in the vicinity of the development are likely to be improved;
- Delays in decision making may be reduced because of good participation early in the process;

- The public are unlikely to raise objections to the project; and
- The developer's image and reputation are likely to be enhanced.

3.4.2 Benefit to the Public

- Capacity is built through people playing an active role during the process. The skills learnt can be used in other community projects;
- Public rights are exercised and protected in participating; and
- Inputs are likely to influence the form and nature of the development and is likely to lead to better development that takes society's needs into account

3.4.3 Benefit to the decision makers

- Public participation is likely to improve decisions since there is access to a broader range of perspectives and opinion on the proposed rehabilitation/augmentation;
- The development is likely to be more sustainable as it takes people's needs and views into account; and
- The legitimacy of project commencement and implementation is likely to be improved.

6.3 Approach to Public Participation and Consultation

The Public consultation process involved visiting the project area and its environs. Project stakeholders were identified and consulted with the aim of informing them about the proposed project, collect their views on anticipated positive and/or negative impacts, get recommendations on how the adverse impacts can be mitigated or avoided, and gather local knowledge that would be useful to the proposed project.

3.4.4 Aims and Objectives of Stakeholders Consultation and Public Participation (CPP)

The aims and objectives of public involvement and consultation include:

- Informing stakeholders and members of public
- Gaining their views, concerns and values
- Taking account of public inputs in decision making
- Influencing project design
- Obtaining local knowledge
- Increasing public confidence
- Improving transparency and accountability in decision making
- Reducing conflict

3.4.5 Stakeholder Consultation

The main key informants targeted in the consultations were both Government and private Institutions operating within the project area. Listening to stakeholder concerns and feedback is a

valuable source of information that can improve project design and outcomes and help in identifying any impacts. The ESIA team held consultation meetings with Key stakeholders as shown in the **Table 6-1** below.

Table 6-1: Stakeholder Consultation Details

Name	Designation
Josphat Mutisya	Deputy County Commissioner –Kilifi County
Hezekiah Mwarua	Managing Director Kimawassco
Kithi Robert	Deputy Principal Kakuyuni Boys Secondary School
Kingi Kazungu	Chief Officer Water and Environment Kilifi County
Assad Sheyumbe	Sub County Administrator-Malind Sub County
Isaac Chibule	Technical Manager Mawasco
Nixon Mramba	MCA Kakuyuni Ward
Farida Mazrui	Kakuyuni sub location Assistant Chief
Naphtali Biryah	Goshi Senior Chief
John Kipsiwa	Assistant County Commissioner- Kilifi County
Jacinta Makau	Planner Kilifi County
Linet Zabibu	Assistant Environmental Officer Kilifi County
Eng. Nicodemus Kerogo	Director, Department of Transport, Kilifi County
Eng. T. Kendagor	Deputy Director, KeRRA Coast Region

3.4.6 Summary of Comments from stakeholders

- Requested for adequate consultation before commencement of the project to create a sense project ownership to the locals
- The project is viable and will supply water to the targeted population who need this basic commodity
- Requested the project team to ensure utilization of road reserves without interfering with private land parcels
- Contractor to practice proper backfilling on the pipeline excavations to avoid accidents and other unfortunate occurrences.
- The project will create job opportunities to the locals
- Appropriate signage's to be erected
- Compensation to be done in case of disturbances on livelihoods for both crop and animal farmers
- Project team to adhere to COVID 19 protocols in curbing spread
- Reinstatement to be done appropriately
- Water to be sprinkled to avoid dust pollution
- Child labour and pregnancies should be avoided

- Proper protection measures during construction along gullies to avoid erosion
- A CSR that will benefit schools and the area residents to be considered.

Public sensitization meetings were held within the project area in May 2021 with the help of the respective local administration more so from NGAO, who included the area chiefs and assistant chiefs. Consultation meeting were held in adherences to WHO and MoH guidelines on measures to curb infection and spread of COVID - 19. A total of 3 meetings were held as shown in Table 6-2 below. The attendance lists and minutes of meetings are presented in Annex 3. Interviews using standard questionnaires were also conducted (sample-filled questionnaires Annex 6)

Table 6-2: Public participation meeting schedule

No	Date	Venue	Location	No of Participants
1	06.05.2021	Chiefs Camp	Lango Baya	25
2	06.05.2021	Chiefs Camp	Jilore	23
3	07.05.2021	Kakuyuni Boys Secondary school	Goshi	22

The following stakeholders were present in the meetings;

- Area chiefs -locations
- Area assistant chiefs
- Deputy principal Kakuyuni Boys Secondary school
- MCA representatives Kakuyuni Ward
- Kakuyuni Boys Secondary School Board members
- Village elders
- Area residents

3.4.7 Summary of Comments and Responses from Public Sensitization Meetings

Table 6-3 below present comments/ concerns that were raised during the public meetings and the responses that were given. Minutes of the public meetings are presented in Annex 3.

Table 6-3: Summary of Comments and Responses from Public Sensitization Meetings

Location	Comments	Response
Goshi	The residents requested to know the total project cost and how much was set aside for the CSR	The consultant informed the meeting that the project cost is approximately Ksh 2 billion, the residents were advised that during implementation phase and based on the budget some CSR proposals may be considered by the implementing agency.
	The community wanted to know if they will be allowed to	The community will use the existing pipeline and additional water kiosks will be considered (this

Location	Comments	Response
	get water from the new pipeline after project completion	was mentioned in anticipation that the water kiosks will be done by the WSPs upon project completion; MAWASCO and KIMAWASCO will revive the existing kiosks once the 2nd pipeline is laid). However, the new proposed rising main will only be used to supply water to the proposed Kakuyuni tanks
	The residents wanted to know how sound pollution from the heavy machinery will be mitigated since one of the construction sites is near a school compound (Proposed Kakuyuni Tank).	Minimal use of machinery will be made where necessary.
	The community wanted to know if there will be any land and way leaves compensation.	For the pipeline route, it was noted that it will use the existing road reserve. The new proposed tank will be constructed at Kakuyuni Boys Secondary School. A social screening was conducted and there is no physical or economic displacement anticipated., appropriate measures put in place to mitigate such displacement if encountered. In addition, relevant permit from road authorities will be obtained before commencement of works along the road reserves
	The residents wanted to know if there were any plans set aside for the non-functional kiosks.	The non-operational kiosks will be rehabilitated; MAWASCO and KIMAWASCO will revive the existing kiosks once the 2nd pipeline is laid
	The residents wanted to know if community members will be given first priority when it comes to job opportunities	They were informed that the contractor will only recruit unskilled, semi-skilled and certain cadres of skilled labour from the local community, provided these are available.

Location	Comments	Response
	The residents further requested the Water Service Companies to consider reduction of connection charges	They were informed that the issue will be taken by the consultant to KIMAWASCO and MAWASCO who will pick up and address it where possible
Lango Baya	The residents wanted to know if community members will be given first priority when it comes to job opportunities	They were informed that the contractor will consider that and for a proper recruitment, the chief will be involved.
	The residents further requested the Water Service Companies to consider reduction of connection charges.	They were informed that the issue will be taken to respective water companies who will pick up and address it where possible
	The residents wanted to know the exact route that the pipeline would pass so as combat the issue of disturbance	The participants were taken through the scope and areas where the pipeline will transverse. The pipeline will traverse from Baricho water works, to the existing CWWDA wayleave then onto C103 road up to Kakuyuni. The pipeline will be laid on the existing wayleave and it was established that no displacements of people or destruction of properties will be experienced during the implementing phase.
	The residents also requested that recommendation letters be given to the casuals who will have cooperated and worked throughout the project period.	The participants were informed that the contractor will be requested to do recommendation letters to the employees who will participate in the project. However, an agreement will be made once the contractor is on board to determine the number of months under which one can be issued with a recommendation letter
	The residents requested for classroom construction at Mambo Sasa and an ablution block at Lango Baya market.	The participants were informed that discussion with the client will be done by the consultant to evaluate a possibility of having a CSR project at Lango Baya

Location	Comments	Response
	They also strongly emphasized on the issue of prompt reinstatement especially of broken pipes	The participants were assured of appropriate reinstatement throughout the project construction phase
Jilore	Residents wanted to know whether they will be compensated in case they are disturbed or displaced	The participants were informed that a survey and a social screening had been conducted in the proposed route and there will be no displacement or disturbance
	The residents wanted to know where the pipeline will follow	They were informed that the pipeline will follow the old pipeline way leave from Kakuyuni tanks to Ganda tanks
	The resident wanted to know whether there will be any CSR	The consultant requested the community to come a with CSR ideas to be presented to the client by the consultant for immediate for future consideration.

3.4.8 Photo log

Figure 6-1, presents sample photographs that were taken during the meeting proceedings at Lango baya chief's camp, Jilore Chief's Camp and Kakuyuni Boys Secondary School.

Project engineer taking participants through project scope

Assistant Chief Lango Baya Addressing participants during the meeting

Kakuyuni Ward Member of couty assembly (MCA) addressing participants

A resident raising a concern during a meeting at Kakuyuni Boys Secondary School

Figure 6-1: Sample Photographs Taken During the Meetings

3.4.9 Interviews

A structured questionnaire was also administered to solicit views regarding the project as well as its design. The questionnaire initially gave introduction and created awareness to the respondents regarding the project.

Afterwards, questionnaire enquired on acceptance of the project and rating of the current water supply and anticipated negative impacts and suggested mitigation measures as well as any suggestions and recommendations.

74 No of questionnaires were received for analysis this constituted 53 No from male respondents and 21 No from female residents. Below is a summary of the analysis

3.4.10 Literacy Levels

Literacy levels were as follows: - Primary level 40%, Secondary level 30%, college /university 20% and no education at all 10%. Therefore, the areas have a high literacy level, which is common in urban settings.

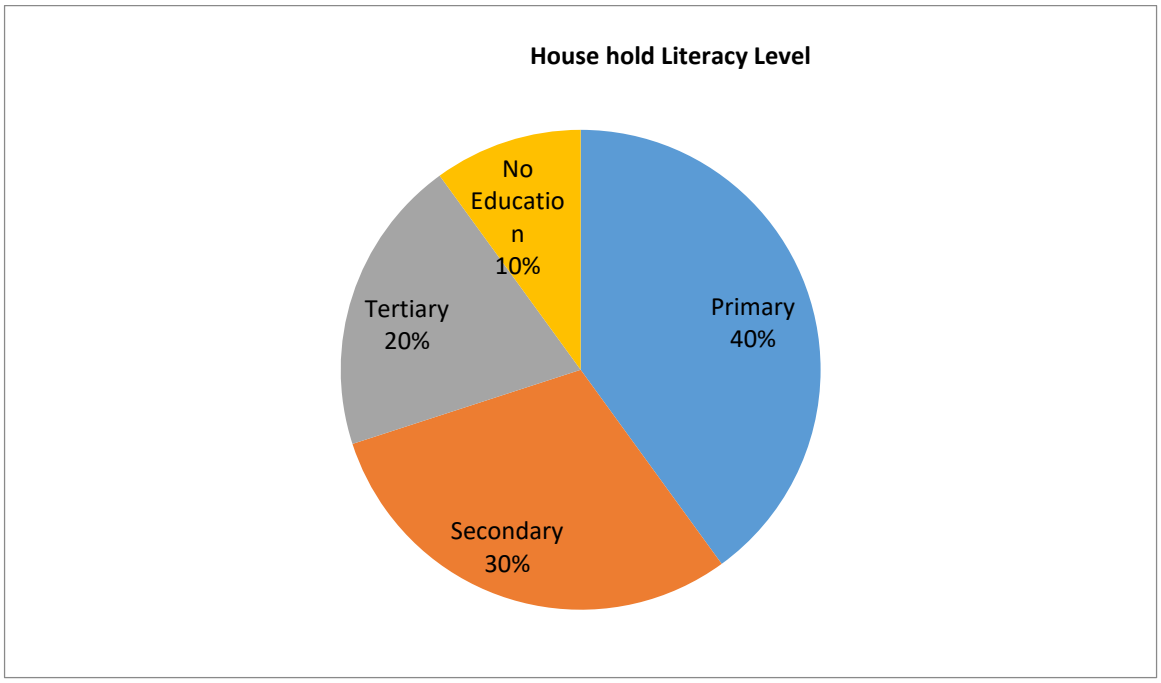


Figure 6-2: Household Literacy Level

3.4.11 Water sources

From the graph below 50% of the residents obtain their water from the Water Service Companies, 25% of the residents are served by local water vendors, Rainwater serves 13% of the residents, 8% of the residents said their main source of water is from boreholes the remaining 4% get their water from other sources like Rivers. 50% of the resident indicated that the quality of water was good while the rest said that it was fair

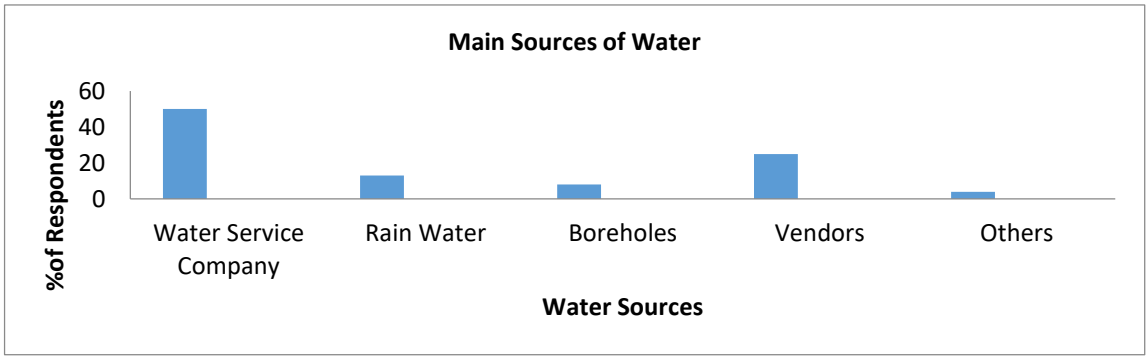


Figure 6-3: main sources of Water

3.4.12 Sanitation services

The methods used by the population to dispose refuse are distributed as follows: 30% burn their waste while the remaining 70% dump in open areas or bushes.

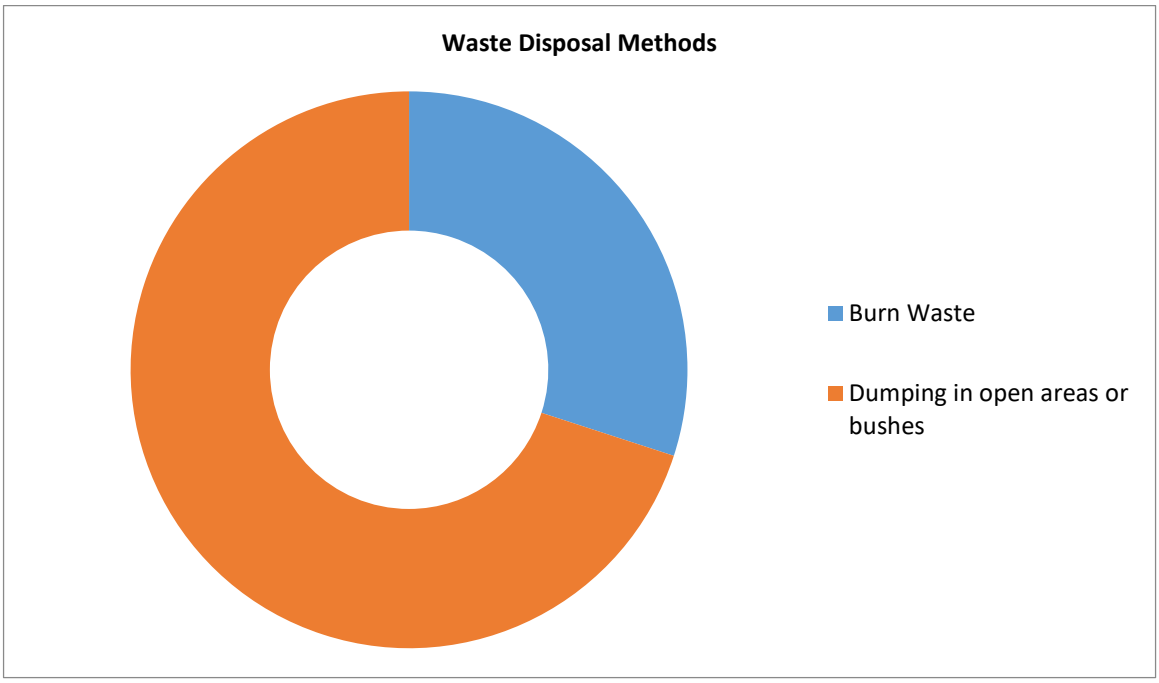


Figure 6-4: Common Waste Disposal Methods

50% of the households have toilets and the 50% have no latrine coverage. Out of the 50% with latrine coverage, half of the population uses the flush system while the remainder use pit latrines. The area does not have a sewerage network.

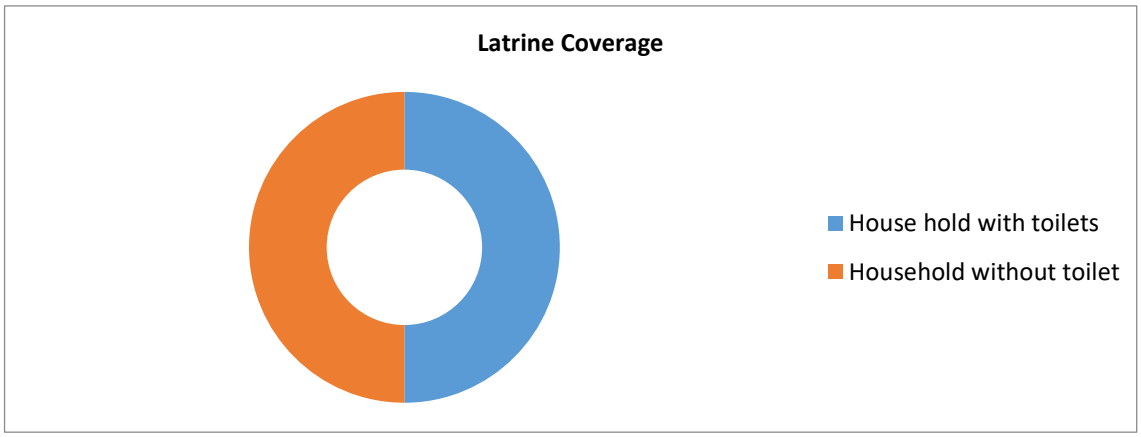


Figure 6-5: A latrine coverage in project area

3.4.13 Challenges faced with water sources used

52% of the residents said water shortage was their biggest challenge. 14% of the residents aligned their challenges to long distance travelled to get water, another 14% of the residents said the challenge they face from their water sources is that they are at times contaminated. 10% of the residents attributed their water challenges to high cost of water. Unpaid electricity by the WSP's

leading to no pumping of water hence shortage or no water at all is a challenge faced by 5% of the residents while another 5% complained about Low pressure as shown in figure 6-6 below

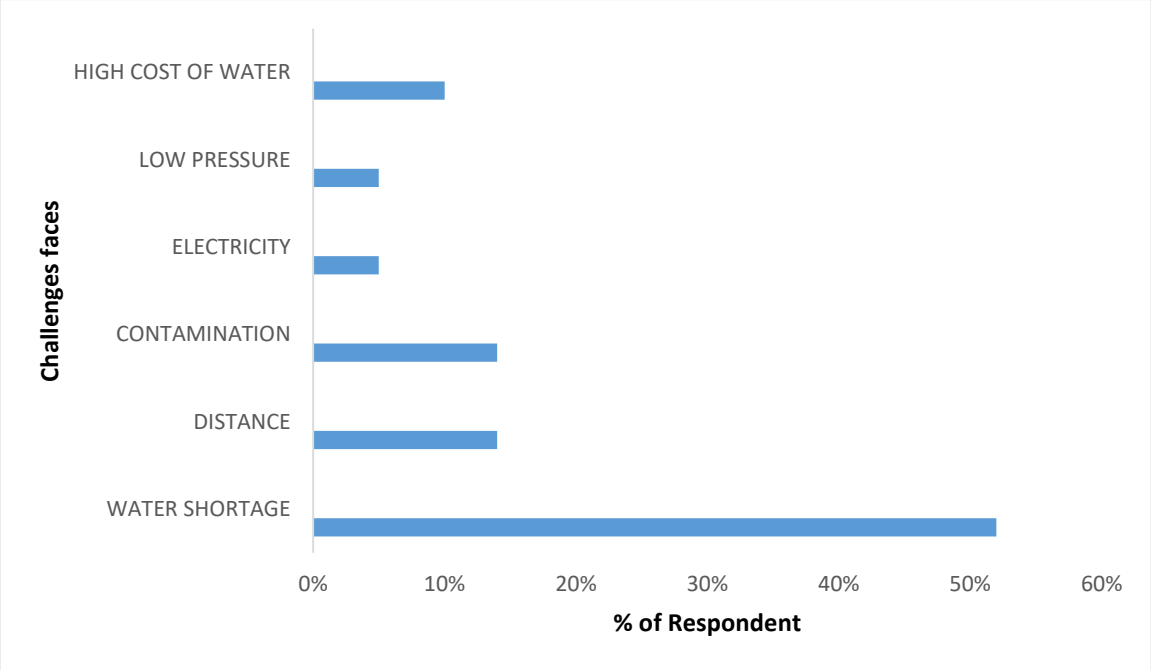


Figure 6-6: water challenges

3.4.14 Project awareness and Support

All the residents were aware of the proposed project. The residents were asked if they were in support of the proposed second Baricho Kakuyuni Pipeline and in response 94% of the residents said they were supporting the project while the rest 6% of the residents did not respond to the question.

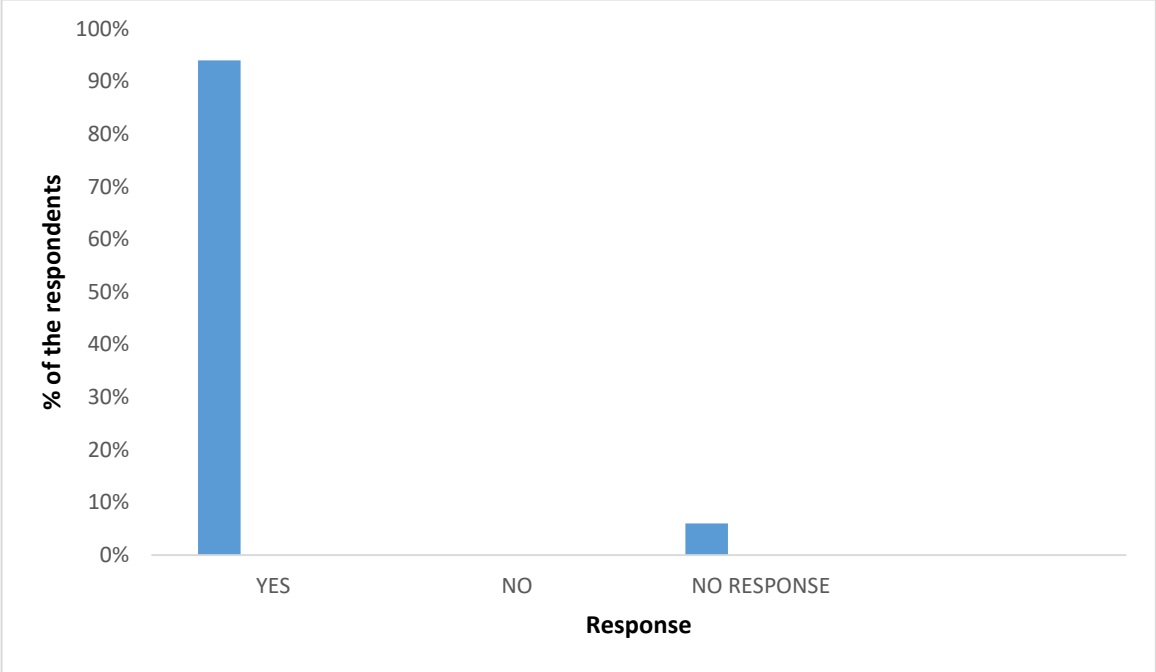


Figure 6-7: Support of the project

3.4.15 Anticipated positive impact

The residents were asked positive impacts that would be brought by the proposed project. 43% said they will benefit from the employment opportunities that would be presented by the project, 37% said there will be reliable and adequate flow of water. 7% said the project will promote their living standards while another 7% of the residents said there will be improved sanitation, 3% of the residents said the project once complete will appreciate the land and the remaining 3% said they will be able to borrow the new culture from non-locals who will be working in the project area during the construction phase as shown in figure 6-8 below.

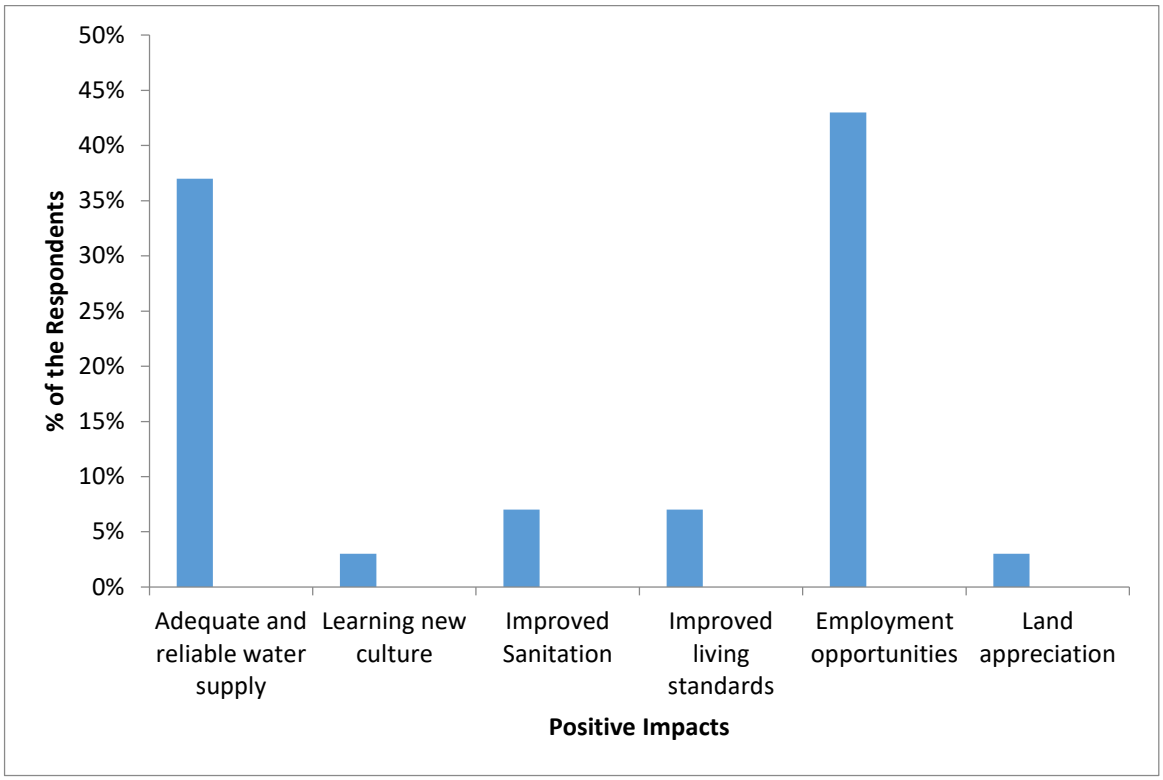


Figure 6-8: Anticipated Positive Impacts

3.4.16 Anticipated negative impacts

The residents gave negative impacts of the proposed project. 30% of the residents were concerned about the Air pollution during the project operation; another 23% were worried that they could be displaced. However, this concern was addressed when it was established by the Consultant that the pipeline will pass through the existing road reserve. About 19% of the residents were concerned about the noise pollution from the heavy machinery that would be used during the excavation and pipe laying. 12% of the residents were concerned about a decline in moral decadence. Another 12% of the residents' cited project related conflicts as negative impact. The proposed mitigation measures for the negative impacts that were suggested are included in Chapter 7. Temporary destruction of the environment was represented by 4% of the residents.

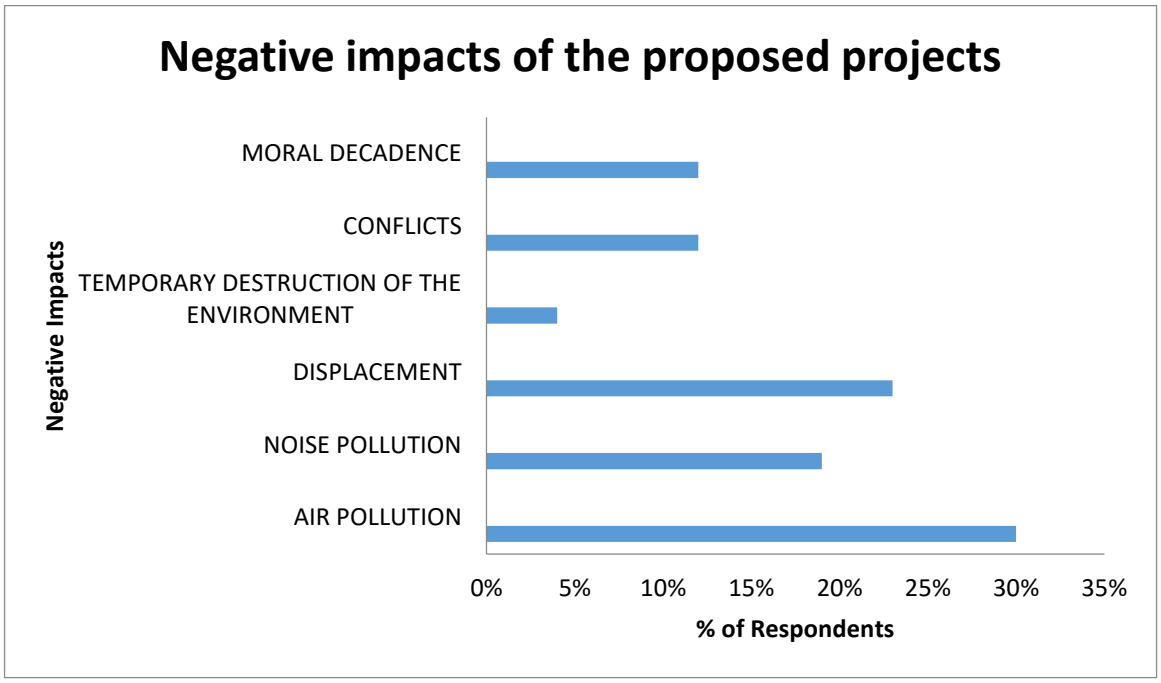


Figure 6-9: Anticipated Negative Impacts

CHAPTER 7 : ASSESSMENT OF IMPACTS AND MITIGATION MEASURES

7.1 Introduction

This ESIA assessment has been systematically conducted to determine whether the proposed Project will have adverse impact on the environment. The Environmental Management and Co-ordination Act (EMCA) No .8 of 2015 provide the legal and statutory guideline for the Environment and Social Impact Assessment process in Kenya.

The impacts in this Chapter have been generated based on the analysis of the proposed environment in relation to the proposed project. The impacts have been segregated in three main phases: Pre-Construction Phase, Construction Phase, Operation Phase and Decommissioning Phase. Impacts can be categorized into:

- Impacts on biophysical environment;
- Health and safety impacts
- Social-economic impacts

7.2 Definition and Classification of Environmental Impact

An environmental or social impact is any change to the existing condition of the environment caused by human activity or an external influence. Impacts may be:

- Positive (beneficial) or negative (adverse);
- Direct or indirect, long-term or short-term in duration, and widespread or local in the extent of their effect.

Impacts are termed cumulative when they add incrementally to existing impacts. In the case of the Project, potential environmental impacts would arise during the construction and operation phases of the Project and at both stages positive and negative impacts would occur.

7.3 Impact Significance

The purpose of this ESIA CPR is to identify the significant impacts related to the project under consideration and then to determine the appropriate means to avoid or mitigate those which are negative. Significant impacts are defined, not necessarily in order of importance, as being those which:

- Relate to protected areas or to historically and culturally important areas;
- Area of public concern and importance.
- Trigger subsequent secondary impacts.
- Elevate the risk to life threatening circumstances.
- Affect sensitive environmental factors and parameters.

7.4 Impact Scoring and Rating Criteria

Precautionary principle was used to establish the significance of impacts and their management and mitigation i.e., where there is uncertainty or insufficient information, the Environmentalist opted to err on the side of caution.

7.5 Pre-construction phase

7.5.1. Positive impacts

7.5.1.1 Documentation and publicity

The project area will benefit significantly in terms of the intensive information gathering during the pre-project feasibility study and the pre-project EIA which will generate useful reports that will create important reference points for the area both for scientific research and planning activities.

7.5.1.2 Employment

Employment opportunities will be created during construction of campsite for the contractor staff and storage of materials

7.5.2 Negative impacts

7.5.2.1 Influx of workers from other areas

The project area might experience an influx of workers from other areas.

Mitigation Measures:

- Effective community engagement and strong grievance mechanisms on matters related to labour
- Effective contractual obligations for the contractor to adhere to the mitigation of risks against labour influx.
- Proper records of labour force on site while avoiding child and forced labour.
- Fair treatment, non-discrimination and equal opportunity of workers.
- Comply with provisions of Labour Relations Act 2012 and Work Place Injuries and Benefits Act (WIBA 2007).
- The Contractor shall require his employees, sub-contractors, sub consultants, and any personnel thereof engaged in construction works to individually sign and comply with a Code of Conduct
- The Contactor will need to prepare a project specific labour management plan

7.6 Construction Phase

7.6.1 Positive impacts

The following are the positive impacts during construction phase of the proposed Project:

7.6.1.1 Employment opportunities

With the construction of the proposed Project, there will be employment opportunities for both professionals and unskilled workers, earnings from the wages will improve their living standards. The workers will include casual labourers, plumbers and engineers who are expected to work on the site for a period of time. Semi- skilled, unskilled labourers and formal employees are expected to obtain gainful employment during the period of construction. With labour intensive construction technologies, the project will provide employment for youth and provide support to the GoK initiatives on creation of jobs.

The Contractor will be required to allocate casual labour opportunities to the local community members

Employment opportunities will also be of benefit in economic and social sense. Economic sense means, that abundant unskilled labour will be used while social sense signify that the poor community will be engaged in productive employment other than remaining idle and helpless which in most cases may translate to engagement in crime. Apart from casual labour, semi-skilled and skilled employees are also expected to obtain employment during the construction period. Employment opportunities will also be of benefit in economic and social sense.

Based on the Scope of Works, it is estimated that the following employment opportunities will be created during the Construction Phase:

Table 7-1: Jobs to be created by the Project

Description	No.
Casual Labourers	100
Skilled Staff	30
Plant Operators / Drivers	20
Managerial Staff	10

7.6.1.2 Creation of a market for construction materials

The Project will require materials, some of which will be sourced locally and some internationally. These include steel pipes, valves, cement, sand, hard core and chemicals. This will provide a ready market for suppliers in and outside the project area.

7.6.1.3 Increased local incomes

The local community may get extra income from the sale of construction materials from their firms and also renting spaces for campsites.

7.6.1.4 Economic growth

Through the use of locally available materials during the construction phase for example pipes and others; the project will contribute towards growth of the country's economy by contributing to the gross domestic product. The consumption of these materials, oil, fuel and others will attract taxes.

7.6.1.5 Injection of money into the local economy

A large sum of the Project money shall be released into the local economy due to the construction activities. It is envisaged that during construction a large number of activities shall take place including but not limited to the following listed below;

- Payments for skilled and unskilled labour;
- Purchases of construction materials; and
- Payments for local provisions including fuel, foods and accommodation.

7.6.2 Negative impacts

7.6.2.1 Impacts on Vegetation Cover

Human settlement and anthropogenic activities have resulted to the areas being cleared of natural vegetation; clearance is done in order to provide land for development of houses and land for cultivation. However, less significant impact to vegetation is expected in terms of:

- Loss of vegetation cover along pipeline route, intake area and reservoir tanks
- Economic loss tree to destruction of trees
- Less significant terrestrial habitat disruption

The risk of destruction of vegetation in the project areas is low and will be further minimized by limiting Site Clearance and Construction activities to the pipeline routes within the Project area.

Mitigation measure

- Reinstatement of the project sites to their original after completion of civil works
- All hedges damaged during construction to be reinstated after completion of the Works
- The contractor to adhere to the delineated construction work area.
- Planting of grass along the way leave and Pipeline friendly tree to be grown after construction

7.6.2.2 Impacts on Soils

The Project activities are likely to have minor impacts on soils, this impacts include:

i. Soil Erosion
ii. Soil de-stabilization
iii. Soil pollution.

The impact if not mitigated could result to:

i. Sediment transfer.

ii. Reduced rainfall infiltration
iii. River bank damage
iv. Alteration of the biophysical and chemical component of the soil reducing soil productivity.

Mitigation measures (Soil Erosion)

- The contractor to adhere to the proposed soil conservation practices.
- Proper and compacted back filling.
- The contractor to stick to clear delineation of the construction to avoid unnecessary vegetation loss.
- Planting of vegetation cover along the pipeline way leave

Mitigation measures (Soil de-stabilization)

- Split compacted area to reduce runoff & re-vegetate where necessary
- Vehicles to be kept in designated access roads.
- Minimize compaction during stockpiling by placing soil in dry state

Mitigation measures (Soil Pollution)

- Any polluted soil should be handled with care for proper disposal.
- Concrete mixing shall be done on concrete slabs or a large metal sheet or mortar boards
- Maintenance of vehicles to be done strictly at designated place/Drip trays to be used to avoid oil spills.
- Excavation materials to be stock piled at the demarcated location.
- Rehabilitation of the site after construction

7.6.2.3 Project Impact on Water

The project is likely to have less significant impacts to water in terms of:

i. Increased Water demand
ii. Management of Waste water

This impact if not mitigated could result to

i. Reduced water quality
ii. Siltation
iii. Increased water demand
iv. Increased toxic levels in soil and water

Project Impacts on Water Resources can be mitigated as follows

Mitigation measures (Reduced Water Quality)

- Storing of fuels, oils and chemicals on impermeable surfaces away from surface drains

- The machines to be properly serviced offsite and maintained to avoid spillage of oil into the water bodies

Mitigation measures (Siltation, Obstruction and Water Demand)

- Use of soil erosion control measures e.g., construction of gabions, vegetating the site after laying pipes
- Ensure prompt reinstatement of drainage channels following trenching and backfilling and providing for temporary drains.

Mitigation measure (Waste Water Management)

- Grey water to be contained and properly channelled.
- Onsite treatment of Grey water by the facility approved by the resident engineer.
- Water containing pollutants should be kept in a conservancy tank for removal to prevent pollution of the surface water and surface water bodies.
- Prompt action to be taken by the contractor in case of any pollution incident. Spill kits should be maintained at areas where potential pollutants are stored

7.6.2.4 Solid Wastes Generation from Construction activities

Construction activities at the work sites and Contractor's Camps will generate some Spoil material, solid wastes such as plastic containers, used tyres, metal parts, plastics and cables. Such material if not mitigated could be washed away to drainage channels and rivers eventually clogging the drainage channels and increasing river sedimentation.

Mitigation measure (Solid Waste Mitigation Measures)

- Maximum reuse of excavated material.
- Implementation of Soil erosion management in the spoil locations
- Construction wastes (residual earth, debris and scrap materials) to be collected at designated points and Contractor to dispose to appropriately
- Contractor's Camps and Construction Sites to have designated waste collection points,
- Contractor shall engage a licensed waster transported to regularly transport accumulated wastes for final disposal at an approved dumping site
- Environmental Management, Health and Safety Training Programmes to be conducted for Contractor's Staff to create awareness on proper solid wastes management
- Contractor to provide different bins for segregation of non-hazardous and hazardous wastes for appropriate disposal
- Tracking of waste to be undertaken to ensure disposal to designated dumping sites.

7.6.2.5 Accidental Oil and fuel Spills and Leaks

The Project will involve use of plant and equipment diesel oils. In the event that these oils accidentally leak into the environ, they could result to significant contamination of soil, surface

and underground water resources

Oils Spills can be mitigated as follows

- Checking and regular servicing of Equipment.
- Re-fuelling at safe designated locations,
- Storage areas to be purpose-built with secondary containment
- Use of spill kits and applications of emergency spill procedures.
- Provision of a 20cm layer of sand and ballast at the machinery storage area and diesel tank section, this layer act as sink to potential oil spills and will be replaced when saturated.
- Vehicle maintenance to be done in impervious concrete platforms and grease and oil traps to be used.
- Safe disposal of used oil through licensed hazardous waste handler

7.6.2.6 Loss of Temporal Assets and Sources of Livelihood

No Impact is anticipated to people's assets and sources of livelihood due to the following reasons

i) The proposed tank sites are on public land and are free from encroachment. in case of any issues they may arise, it will be dealt on case by case basis
ii) The proposed pipeline will be laid on the road reserve that is free from encroachment.
iii) A survey and social screening studies undertaken during the ESIA data collection did not encounter any form of displacement that will be encountered during the construction period

OP 4.12 on Involuntary Resettlement is therefore Not Triggered

7.6.2.7 Disruption of Public Utilities

The proposed project will affect other public utility infrastructure which include, existing water infrastructure, internal roads within the project areas, and storm water drainage channels.

Mitigation Measures for Disruption of Public Utilities

- Contractor to carry out piloting to locate services such as pipes and cables along the Pipeline Route before commencing excavation works.
- Length of excavation to be restricted to sections that can be reinstated within the shortest period possible to minimize time of disruption of services.
- Consultation and liaison with the various service providers will be undertaken throughout the project life.

7.6.2.8 Impact on cultural Heritage

Although the ESIA or RAP screening did not identify any cultural sites, the project is located within a culture rich area, which the project may uncover unknown cultural resources. These sites may be of importance to the local community. These sites may include and not limited to,

archaeological sites, historical sites, remains and objects, including graveyards and/or individual graves during excavation or construction.

Mitigation Measures for cultural heritage

- Use of "chance find" procedures by the contractor See Annex 4 for "Chance Find" procedures

7.6.2.9 Air Pollution and Dust Generation

Air Pollution can be caused by emissions from Construction Plant and Equipment and Vehicles. Dust can be generated by vehicles travelling on unpaved roads and tracks, and dust from exposed, non-vegetated surfaces. Some dust will also be generated during excavation works, by blowing from dump truck loads, and possibly from project borrow pits and quarries.

Mitigation Measures (Air pollution)

- The contractor to comply the provisions of EMCA (Air Quality Regulations) 2014, to be enforced by the Supervising Engineer.
- Workers shall be trained on management of air pollution from vehicles and machinery.
- All construction machinery shall be maintained and serviced in accordance with the manufacturers' specifications
- The removal of vegetation shall be avoided until such time as clearance is required and exposed surfaces shall be re-vegetated or stabilized as soon as practically possible
- The contractor shall not carry out dust generating activities (excavation, handling and transport of soils) during times of strong winds
- Vehicles delivering construction materials and vehicles hauling excavated materials shall be covered to reduce spills and windblown dust
- Water sprays shall be used on all earthwork's areas within 200 metres of human settlement especially during the dry season

7.6.2.10 Noise and Excessive Vibrations

Noise and Excessive Vibrations are caused by operation of construction plant and equipment and activities such as excavation and rock breaking. This impact poses a health and safety risk to both the communities living in the project area and construction workers. At Kakuyuni secondary school, noisy construction activities can be a source of nuisance and cause disturbance to learning activities.

Mitigation Measures for exposure to Noise and Excessive Vibrations

- Contractor will comply with provisions of EMCA (Noise and Excessive Vibrations) Regulations of 2009

- The Contractor shall keep noise level within acceptable limits (60dBA for sensitive locations (residential, educational, health institutions etc) and 75 dBA for other areas during the day Decibels during the night) and construction activities shall, where possible, be confined to normal working hours in the residential areas
- Hospitals and other noise sensitive areas such as schools shall be notified by the Contractor at least 5 days before construction is due to commence in their vicinity. For works within Kakuyuni school, noisy activities shall be scheduled, as feasible, to occur outside learning hours
- Undertake Noise and excessive Vibration Assessments
- Effective use of appropriate PPE (ear plugs or muffs) by exposed workers and Proper maintenance of machines.
- Any complaints received by the Contractor regarding noise will be recorded and communicated to the Supervising Engineer for appropriate action

7.6.2.11 Risk of Accidents at Work Sites

Accidents during construction activities may occur due to failure to use Personal Protective Equipment (PPE) by workers on site and members of the public illegally accessing the work sites, collapsing of pipeline trenches, traffic accidents involving construction vehicles, electrical safety risks. Accidents may result in injuries or even death of workers or members of the public.

Mitigation Measures for Accidents at Work sites

- Contractor to provide a Healthy and Safety Plan prior to the commencement of works to be approved by the Supervising Engineer. The plan shall comprehensively analyse all potential safety and health risks and provide corresponding prevention measures, including emergency response plan.
- All workers to be inducted and trained on specific safety measures regularly throughout the construction period.
- As applicable, works including operating equipment and electromechanical installations will be performed only by duly qualified personnel
- Construction Workers and the Supervising Team to be provided with Personal Protective Equipment including gloves, gumboots, overalls and helmets. Use of PPE to be enforced by the Supervising Engineer.
- Fully stocked First Aid Kits to be provided within the Sites, Camps and in all Project Vehicles. Trained first aiders to be available on site at any time works are ongoing. The ratio of first aiders to workers on site shall be in line with the OSHA First Aid Rules
- Isolate the site for access by the local communities during the construction for their safety and health. Camps and Work Sites to be fenced off/barricaded and Security Guards provided to restrict access to members of the public. The reservoir tank construction area within Kakuyuni secondary school will also be barricaded with access limited to workers only

- Strict use of warning signages and tapes where the trenches are open and at other active construction sites
- Contractor to Employ and train Road Safety Marshalls who will be responsible for management of traffic on site
- Contractor to provide a Traffic Management Plan during construction to be approved by the Supervising Engineer
- Contractor to have designated personnel among the employees to oversee implementation of safety measures at the work sites
- Contractor's trenching method statement shall specifically incorporate measures that ensure trenching and pipe laying is safely conducted
- Limit lengths of open trenches to what can be backfilled within a shortest period feasible
- Contractor will ensure all open trenches are kept drained
- Provide and maintain serviceable and appropriate firefighting equipment at the work sites, including fuel storage areas, garages and offices. Workers will also be drilled on emergency fire response in line with the OSHA 2007 requirements
- Maintain incident register and undertake investigations on any major incidents and accidents to inform further preventive actions as necessary

7.6.2.12 Traffic Congestion and inconveniences

Traffic congestion is anticipated from site related traffic from Contractor vehicles. This may interfere with socio-economic activities which majorly rely on the transport network affected by the construction activities. The proposed project would have minor, short-term impacts on transportation, as the pipelines are anticipated to be installed within road reserve.

Mitigation Measures for traffic congestion

- The contractor shall develop a traffic management plan;
- The Contractor should provide temporary road signs or notices to indicate ongoing works;
- The Contractor together with the Resident Engineer should Plan itineraries for site traffic on a daily basis and avoid peak traffic periods as feasible;
- The Contractor should effect traffic controls and cleanliness to avoid congestion and truck accidents on roads;
- For the site traffic the Contractor has to ensure that they
  - ✓ Only park in designated parking areas;
  - ✓ Don't block pedestrian routes;
  - ✓ Don't block traffic routes;
  - ✓ Obey the speed limits
  - ✓ The resident Engineer has to ensure that the Contractor:
    - Introduces segregated pedestrian walkways;

- Introduces speed limits;
- Reduces the need for reversing vehicles, by introducing a one-way system;
- Uses a qualified BANKSMAN to control deliveries and reversing vehicles;
- Designates loading/unloading areas.

7.6.2.13 Labour influx and Sexual Offences to Minors

The project at construction phase has the potential of attracting workers from various regions to Lango Baya, Jilore and Goshi Locations and their surrounding environs where the project will be implemented, also if the construction tender is awarded to international contractor chances of foreign workers influx to Malindi town is high. Labour influx has potential of triggering the following impacts.

i. Increased HIV/AIDS
ii. Covid 19
iii. Early Child pregnancies
iv. School dropout
v. Sexual offences
vi. Gender based violence

Mitigation measures (Labour Influx)

- Effective community engagement and strong grievance mechanisms on matters related to labour.
- Effective contractual obligations for the contractor to adhere to the mitigation of risks against labour influx
- Proper records of labour force on site while avoiding child and forced labour
- Fair treatment, non-discrimination, and equal opportunity of workers.
- Comply to provisions of WIBA 2007 and IFC PS 2 on labour and Working Conditions, and ILO Conventions 87, 98, 29,105,138,182,100,111
- Develop and implement a children Protection Strategy

7.6.2.14 Human Rights Principles and Gender Inclusivity

The possibility of the works contractor not adhering to requirements of Human Rights Principles and Gender Inclusivity could trigger resistance from Civil Society Organization (CSO) through demonstrations. This could lead to delay substantial delay in Project implementation

Mitigation measures to non-adherence to Human Rights Principles and Gender inclusivity

- Mainstream Gender Inclusivity in hiring of workers and entire Project Management as required by Gender Policy 2011 and 2/3 gender rule.
- Comply to provisions of guidelines on incorporating Human Rights Standards and Principles, including Gender,

- Protecting human risk areas associated with, Disadvantaged Groups, Interfering with Participation Rights, and interfering with Labour Rights

7.6.2.15 Increased Transmission of HIV/AIDS

The project will attract new people to the project area seeking employment during the construction period and this can lead to increased transmission of HIV/AIDS and or the other sexually transmitted diseases (STDs). This is may result from increased incomes of workers whereby some may try to seek for sexual favours using their incomes. The fact that some the contractors and workers will be away from their homes may lead them seeking sexual satisfaction from the area residents.

Mitigation Measures for Increased HIV transmission

- Offer HIV/AIDS sensitization to workers in collaboration with the local health facilities.
- Offer VCT services to the community members with the help of the local Health facilities
- Contractor to provide standard quality condoms to personnel on site

7.6.2.16 Health Impact- spread of COVID-19 among construction workers

The World Health Organization declared COVID-19 a global pandemic after assessing both its alarming levels of spread and severity, and the alarming

of inaction. Consequentially, WHO issued various guidance and measures to prevent the spread of the virus. The measures have been adopted worldwide. Similarly, the Kenyan government has since then issued several guidance and directives after the first case was registered on March 13th 2020. These included complete cessation of movement to and from areas considered hot spots and night curfew, social distancing guidelines, closure on non – critical and essential enterprises, closure of places of worship and public gatherings, mandatory use of masks in public places, among others.

During project execution (civil works), large numbers of workers will be required to assemble together in meetings, toolbox talks and even at work sites; varied number of workforce including suppliers of material and services are also expected to come in from various places in the country which may be COVID-19 hot spots; and interaction of workers with the project host community will happen as workers find accommodation close to work sites, and/or return to their homes after works. The potential for the spread of any infectious disease like COVID-19 by projects is high. There is also the risk that the project may experience large numbers of its workforce becoming ill and will need to consider how they will receive treatment, and whether this will impact on local healthcare services including the project host community. The presence of international workers, especially if they come from countries with high infection rates, may also cause social tension between the foreign workers and the local populations.

Recently, the WHO has warned that the virus is here to stay for a long time and might persist and become our new way. The Government of Kenya has also lifted some of the initial movement

controls and allowed the resumption of business, with certain industry specific guidelines being enforced. The duty of care has now been transferred to individual citizens and enterprises. Recognizing the potent risk this may present, it is difficult to clearly outline exhaustive mitigation measures under the mitigation impacts. As such, there is need for the client and the contractor to develop and adopt COVID-19 Standard Operating Procedure (SOPs) in line with the World Bank guidance, Ministry of Health Directives and site-specific project conditions. These SOPs need to be communicated to all workers and enforced to the latter without fail. In addition to the requirement of the SOPs, the following mitigation measure shall also be adopted:

COVID-19 – Mitigation Measures against spread of COVID-19 amongst workers:

- The Contractors will develop SOPs for managing the spread of Covid-19 during project execution and submit them for the approval of the Supervision Engineer and the Client before mobilizing to site. The SOPs shall be in line with the World Bank guidance on COVID-19, Ministry of Health Directives and site-specific project conditions;
- Mandatory provision and use of appropriate Personal Protective Equipment (PPE) shall be required for all project personnel including workers and visitors;
- Avoid concentration of more than 15 workers at one location. Where there are two or more people gathered, maintain social distancing of at least 2 meters;
- All workers and visitors accessing worksites every day or attending meetings shall be subjected to rapid Covid-19 screening which may include temperature check and other vital signs;
- The project shall put in place means to support rapid testing of suspected workers for covid-19;
- Install hand washing facilities with adequate running water and soap, or sanitizing facilities at entrance to work sites including consultation venues and meetings and ensure they are used;
- Ensure routine sanitization of shared social facilities and other communal places routinely including wiping of workstations, door knobs, hand rails etc;

7.6.2.17 Social risk - Spread of COVID-19 amongst community members during consultations

During implementation of the ESIA, various consultative activities will be undertaken. For efficient and meaningful engagement, a wide range of individual participants, groups in the local community and other stakeholders will be involved. The types of consultations to be used to pass information shall be through public Baraza's, electronic means shall be used where possible and one-on-one basis meetings while observing the COVID-19 mitigation measures to ensure safety stakeholders involved, the community at large and the client. The consultations will involve verification of PAPs covering the occupants of the affected area and vulnerable persons and groups; awareness raising, sensitization of PAPs and gauging attitude to the project; training and capacity building for livelihoods restoration, grievance redress, and execution of site - specific surveys among others. If carried out conventionally, these activities would lead to close interaction between the proponent

and the community members leading to a high risk of spreading COVID-19 amongst community members during the consultation process.

To minimize the risk of spread of COVID-19 amongst community members, alternative means of consultation will be required as mitigation measures to ensure social distancing and appropriate communication measures. The mitigation measures will be supervised by a communications/ stakeholder engagement / social safeguards expert in the project proponent's team.

Mitigation measures against spread of COVID-19 amongst community members

- Electronic means of consulting stakeholders and holding meetings shall be encouraged whenever feasible. One-on-one engagements for the PAPs while observing social distance and adhering to PPE wearing shall be enforced;
- Avoid concentrating of more than 15 community members at one location. Where two or more people are gathered, maintain social distancing of at least 2 meters;
- The team carrying out engagements within the communities on one-on-one basis will be provided with appropriate PPE for the number of people they intend to meet;
- Use traditional channels of communications (TV, newspaper, radio, dedicated phone-lines, public announcements and mail) when stakeholders do not have access to online channels or do not use them frequently. Allow participants to provide feedback and suggestions
- Hold meetings in small groups, mainly in form of FGDs if permitted depending on restrictions in place and subject to strict observance of physical distancing and limited duration. (v) In situations where online interaction is challenging, disseminate information through digital platform (where available) like Facebook and WhatsApp & Chart groups.
- Ensure online registration of participants, distribution of consultation materials and share feedback electronically with participants.

7.6.2.18 Increased Crime and Insecurity

Influx of persons to the project area may lead to increased insecurity and incidences of crime. This impact applies to all the project areas under this assessment.

Mitigation Measures for increased Crime and Insecurity

- Contractor and Supervision Team to liaise regularly with the Local Administration and Police Service to address any insecurity and crime arising during project implementation.
- Contractor to provide 24 hours' security to Workforce Camps, Yards, Stores and to the Supervising Team's Offices

7.6.2.19 Gender based violence

GBV constitutes acts of gross misconduct and are therefore grounds for sanctions, penalties and/or termination of employment. All forms of GBV including grooming are unacceptable be it on the

work site, the work site surroundings, or at workers' camps. Prosecution of those who commit to be pursued.

This impact is triggered during Project Construction Phase is likely to occur. Therefore, below listed provisions are provided in order to mitigate against such GBV and SH related Project induced impacts.

Mitigation measures for GBV

- The contractor will mainstream Gender Inclusivity in hiring of workers and entire Project Management as required by Gender Policy 2011 and 2/3 Gender Rule.
- The existing community structures headed by location chiefs should be involved in local labour hire, emphasize the requirement of hiring women, youth and people with disability and VMGs
- Protecting Human Risk Areas Associated with, Disadvantaged Groups, Interfering with Participation Rights and interfering with Labour Rights:
- Treat women and children (persons under the age of 18) with respect regardless of race, colour, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status.
- Do not use language or behaviour towards women or children that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate.
- Sexual activity with children under 18—including through digital media is prohibited. Mistaken belief regarding the age of a child and consent from the child is not a defense.
- Exchange of money, employment, goods, or services for sex, including sexual favours or other forms of humiliating, degrading or exploitative behaviour is prohibited.
- Sexual interactions between contractor's and consultant's employees at any level and member of the communities surrounding the workplace that are not agreed to with full consent by all parties involved in the sexual act are prohibited. This includes relationships involving the withholding, promise of actual provision of benefit (monetary or non-monetary) to community members in exchange for sex – such sexual activity is considered "non-consensual" within the scope of this Code.
- Where an employee develops concerns or suspicions regarding acts of GBV by a fellow worker, whether in the same contracting firm or not, he or she must report such concerns in accordance with Standard Reporting Procedures.
- All employees are required to attend an induction-training course prior to commencing work on site to ensure they are familiar with the GBV Code of Conduct.
- All employees must attend a mandatory training course once a month for the duration of the contract starting from the first induction training prior to commencement of work to reinforce the understanding of the institutional GBV Code of Conduct.

7.6.2.20 Sexual Exploitation and Abuse (SEA)

This impact refers to sexual exploitation and abuse committed by Project staff against communities and represents a risk at all stages of the Project, especially when employees and community members are not clear about prohibitions against SEA in the Project.

Mitigation Measures

- Develop and implement a SEA action plan with an Accountability and Response Framework as part of the C-ESMP. The SEA action plan will follow guidance on the World Bank's Good Practice Note for Addressing Gender-based Violence in Investment Project Financing involving Major Civil Works (Sept 2018).
- The SEA action plan will include how the project will ensure necessary steps are in place for:
    - Prevention of SEA: including COCs and ongoing sensitization of staff on responsibilities related to the COC and consequences of non-compliance; project-level IEC materials;
    - Response to SEA: including survivor-centered coordinated multi-sectoral referral and assistance to complainants according to standard operating procedures; staff reporting mechanisms; written procedures related to case oversight, investigation and disciplinary procedures at the project level, including confidential data management;
    - Engagement with the community: including development of confidential community-based complaints mechanisms discrete from the standard GRM; mainstreaming of Sexual Exploitation and Abuse (SEA) awareness-raising in all community engagement activities; community-level IEC materials; regular community outreach to women and girls about social risks and their SEA-related rights;

Management and Coordination: including integration of SEA in job descriptions, employments contracts, performance appraisal systems, etc.; development of contract policies related to SEA, including whistle-blower protection and investigation and disciplinary procedures; training for all project management; management of coordination mechanism for case oversight, investigations and disciplinary procedures; supervision of dedicated PSEA focal points in the project and trained community liaison officers

7.6.2.21 Child labour and Protection

The possibility of contractor children abuse is through hiring of child labour, also labour force on site might abuse children within the Project area through sexual advance that could lead to early pregnancies and school dropout including exposure to communicable diseases such as HIV and AIDS. The contractor will undertake the below listed mitigation measures.

Mitigation Measures

- The contractor will develop and implement a Children Protection Strategy that will ensure minors are protected against negative impacts associated by the Project including SEA.
- All staff of the contractor must sign COC, committing themselves towards protecting children, which clearly defines what is and is not acceptable behaviour
- Children under the age of 18 years should be hired on site as provided by Child Rights Act (Amendment Bill) 2014
- Wherever possible, ensure that another adult is present when working in the proximity of children.
- Not invite unaccompanied children to workers home, unless they are at immediate risk of injury or in physical danger.
- Refrain from physical punishment or discipline of children
- Refrain from hiring children for domestic or other labour, which is inappropriate given their age, or developmental stage, which interferes with their time available for education and recreational activities, or which places them at significant risk of injury.
- Comply with all relevant local legislation, including labour laws in relation to child labour specifically provisions of Kenya's Employment Act Cap 226 of 2007 Part VII on protection of children against exploitation

7.6.2.22 Corporate Social Responsibility to the Kakuyuni Boys Secondary School

In implementing the Project, Coast Water Works Development Agency will require 1.4 acres of land for the construction of 5,000m^3 reinforced concrete reservoir. The proposed site is within Kakuyuni Boys Secondary School's land hence the school will provide the required land to allow implementation of the project.

Mitigation Measures

- A memorandum of understanding should be drawn between the school and the Client on the proposed mutual benefit arrangement.
- CWWDA through the Works Contractor to construct a fully furnished modern library for the school.
- Management of noise and air pollution as discussed in the sub-sections 7.6.2.9 and 7.6.2.10 above.

7.7 Operation phases

7.7.1 Positive impacts

7.7.1.1 Improved Accessibility to Clean and Reliable Water Supply

The project once commissioned will have a direct benefit to the Towns of Malindi, Kilifi, Watamu and Gongoni and their surrounding environ including communities along the pipeline route of Lango Baya, Kakoneni, Jilore and Kakuyuni centers. These areas are currently experiencing acute water shortages due to low water supply compared to the current demand for water in these towns.

7.7.1.2 Improved Hygiene and Sanitation in the Project Areas

Good hygiene and sanitation standards are directly linked to provision of reliable and adequate water supply as well as provision of adequate sanitation facilities. The Project target areas will directly benefit from improved hygiene and sanitation as a result of improved water supply networks including consumer connections.

7.7.1.3 Reduced Cases of Water Related Diseases

Cases of water borne disease in the project area areas are likely to reduce. This will effectively reduce related medical expenses among the poor people in the project area with extended long-term increased social productivity.

7.7.1.4 Reduced Water and Sanitation Burden to Women and Girls

The burden of collecting water to the households is in many occasions and caring for the sick who suffer for instance from water related illness is presumed to the responsibility of women and girls. Women and girls constitute a significant ratio of the total population in the project areas and are largely affected by poor sanitation and hygiene as they are left to care for the home cleanliness, take care of children's health as well as spend hours looking for clean water.

Improved water supply will lessen this burden, avail more time for schooling for the girls and also ensure enhanced family health.

7.7.1.5 Increased Land Values in the Project Area

Provision of any infrastructure is an additional value for properties in target areas of towns of Malindi, Kilifi, Watamu and Gongoni and their surrounding environ including communities along the pipeline route of Lango Baya, Kakoneni, Jilore and Kakuyuni centers. It is expected that property and land will appreciate because of improved access to potable water and sanitation facilities.

7.7.1.6 Increased Tourism in the Area

The project area has many tourist attractions and destinations such as the hotels, as well as the Indian Ocean. The increase in water will allow for a more lucrative business opportunity in terms of hotels and tourist related activities.

7.7.1.7 Improved revenue for Malindi and Kilifi-Mariakani Water and Sewerage Companies

Improved revenue to both Malindi and Kilifi-Mariakani Water and Sewerage Companies from increased customer base as the proposed project will increase the number of residents being served by the water companies. It will also make the supply reliable thus increasing the revenue base. Further, this will improve sustainability of the companies

7.7.2 Potential Negative Impacts and Mitigation Measures during the Operation Phase

7.7.2.1. Risk of Burst of Water Pipelines Leading to Water Loss (Non-Revenue Water)

Pipeline bursts may occur as a result of interference with the pipelines during future construction activities e.g., road construction works in the project areas or due to lack of maintenance of the pipelines. Loss of water through such bursts will lead to revenue loss for KIMAWASCO /MAWASCO. Burst pipelines may also cause damage to roads, properties, etc.

Mitigation of Pipe burst leading to NRW

- The risk of pipeline bursts is low as the pipeline design, including the selection of pipe material with appropriate pressure rating
- This risk will be further minimized through regular inspection, repair and maintenance of the pipeline by the Operator, KIMAWASCO /MAWASCO
- Activate a community watch group for prompt information sharing on the status of the pipeline

7.7.2.2. Risk of Illegal Connections and Vandalism of Water Pipelines

Illegal connections and vandalism of Water Pipelines is a common practice, this ultimately results in loss of revenue to KIMAWASCO /MAWASCO.

Mitigation Measures to Vandalism of Pipeline Infrastructure

- Regular inspection to be carried out KIMAWASCO /MAWASCO in the project areas to identify and remove illegal connections to water pipelines
- Prosecution of offenders as required by Kilifi County By laws
- KIMAWASCO /MAWASCO will undertake regular awareness campaigns in partnership with suitable Community Based Organizations and the Local Administration to educate the public against illegal connections and vandalism of pipelines

7.7.2.3. Generation of both solid and increased liquid waste

The establishment of an adequate water distribution system will be mostly beneficial to the local community, however with the provision of water comes the increase in the generation of solid and liquid waste. Kilifi and Gongoni towns and their environs currently have few sewerage or sanitation facilities. Majority of the stakeholders within the project area, use septic tanks. Water supply will lead to an increase in the generation of solid and liquid waste, and with the area's proximity to the ocean the risk of untreated sewage, making its way into the ocean.

Mitigation Measures to solid and liquid waste

- Provide adequate waste segregation disposal facilities. Ensure collection of all solid waste from generation points, safe transportation to a central point where they are sorted out and safely disposed according to type to protect the environmental resources.
- Put in place adequate and efficient sanitary facilities for handling liquid waste especially waste water to protect the ocean from pollution. This should be included in sanitation plans for the county.
- In the long term the respective WSPs should invest in a waste water collection and treatment system for Kilifi County to ensure proper handling of waste water. This would also help in protecting local environment from possible contamination with direct sewage.

7.7.2.4. Impact from periodic water release of washout valves and tank overflow

There will be periodic releases of water from washout valves or discharge of overflow water when the tank is full. Release of large amounts of water from the tank and washout valves may have impacts on flora, fauna and soil if not well managed. It may also erode adjacent land parcels.

Mitigation measure

- Periodic water released should be recycled into the system.
- Ensure that the washouts are sited properly and that the water is channelled to the nearby drainage system or a water course.

7.7.2.5. Health and safety impacts

Impact on occupational health and safety during routine operation activities of the reservoir and the pipes to the operator include

- ✓ Confined space entry at the tank site,
- ✓ Repairs on busy roads,
- ✓ Electromechanical works repair risks etc

Mitigation Measure

- Provide standard procedures for maintenance works safety
- Create awareness on existence of the pipeline on the way leaves

- Have trained personnel to attend to all repairs with trained skill to work in confined spaces

7.8 Decommissioning Phase

7.8.1 Positive impact

7.8.1.1 Employment opportunities

Temporary employment opportunities will be created for the demolition of laid and constructed structures during the decommissioning works.

7.8.1.2 Environmental rehabilitation

Rehabilitation of site to ensure the site is left as natural as possible close or better than before

7.8.2 Negative Impacts

7.8.2.1 Loss of jobs and income

The people that will be employed to operate and maintain the water supply system will lose their jobs immediately after the closure of the project. The loss of jobs will have far-reaching impacts as it will lead to loss of income and social stress.

Mitigation measures

- Notify the employees in advance on the project closure date and adequately compensate them;
- Dismissal procedures to be compliant with Employment Act, 2007;
- Provide counselling and alternative skills for alternative activities;
- Employer should find alternative means of livelihood for the staff who were employed at the treatment plant.

7.8.2.2 Noise Pollution

Activities likely to produce noise during decommissioning include demolition of structures and excavation of pipeline works and structures at the intake areas as well as any staff offices and quarters built on site.

Mitigation measures:

- Schedule noisy activities during the day time period;
- Use silencers on machines where possible;
- Ensure machinery is well maintained to reduce noise emitted.

7.8.2.3 Solid Waste Material

It is expected that large amounts of solid waste material arising during decommissioning will include: steel pipes, glass panels, stones, pipes, wood, metal, paper, plastic, equipment,

vegetation, etc. The proper disposal of these materials is critical. Although demolition waste is generally considered as less harmful to the environment since they are composed of inert materials, there is growing evidence that large quantities of such waste may lead to release of certain hazardous chemicals into the environment.

Mitigation measures:

- Disposal of solid waste in compliance with EMCA 2006 Waste Management Regulations;
- Segregation of waste to encourage reuse and recycling;
- Ensuring that the contracted waste collector is registered with NEMA to collect and dispose wastes.

7.8.2.4 Occupational health and safety

If not handled with care the demolition may lead to exposure of hazardous chemicals to workers and surrounding communities which poses as health risks to them. Machinery and equipment used for the same also possess as danger to the workers if not handled well and with the correct PPE.

Mitigation measures:

- Provide the correct PPE for the workers when conducting the demolition activities;
- Conduct training on health and safety procedures to the workers prior to commencement of demolition;
- Proper plans should be made prior to demolition so as to contain the raw sewage and other wastewater that poses as health risk to human beings and the environment, to prevent the workers and surrounding communities from getting into contact with it.

CHAPTER 8 : ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN (ESMMP)

8.1 Introduction

The aim of the environmental and social management and monitoring plan (ESMMP) is to detail the actions required to effectively implement the mitigation measures identified and recommended in the ESIA. These actions are required to minimize negative impacts and enhance positive impacts associated with the proposed water supply project LOT 1 - transmission pipeline from Baricho to Kakuyuni Tanks. The ESMP actions present the commitments made by the proponent, for addressing the impacts of the project. It is important to note that an ESMMP is a living document since it is to be updated and amended as new information (e.g., environmental data), policies, authority guidelines and technologies develop. The ESMP identifies management actions that need to be implemented in various phases of the proposed water supply project LOT 1 - transmission pipeline from Baricho to Kakuyuni tanks life cycle as follows:

8.2 Planning and design phase

Refers to the stage when the feasibility studies are being undertaken, the project description is being developed and proposed water supply project LOT 1 - transmission pipeline from Baricho to Kakuyuni tanks is being designed. During this phase, the ESIA is completed and license is applied for.

8.3 Construction phase

This will commence after the proposed water supply project in Kilifi County license has been issued and CWWDA has taken the decision to implement the project. The construction phase involves the development and construction of the project infrastructure.

8.4 Operations

This is the phase during which the proposed water supply in Kilifi County project will be operated and in use.

8.5 Decommissioning Phase

The project has been designed to operate effectively for over 20 years. In the event that the infrastructure will be required to be overhauled, then the following steps should be considered in order to undertake the procedure in a structured manner with minimum impact to both human and natural environment.

Table 8-1: Decommissioning Flow Chart

	Action	Actor
Step 1	**Initiation** • Development of an Objective Worksheet and checklist incorporating references, legal, stakeholder engagement and policies • Undertake decommissioning audit	**Proponent**
Step 2	**Prepare Road Map for Decommissioning Design** • Conduct design review to validate elements of the design and ensure design features are incorporated in the decommissioning design. • Public consultations	**Proponent**
Step 3	**Prepare and Award Contract** • Prepare a contract that incorporates validated project information and award to a contractor as per the Procurement rules.	**Proponent**
Step 4	**Execute Decommission Works** • Implement design elements and criteria on the Project in accordance with specifications and drawings. • Inspect during decommissioning and at Project completion to ensure that all design elements are implemented according to design specifications.	**Contractor**
Step 5	**Non-Conformance, Corrective/Preventive Action** • Determine root cause • Propose corrective measures • Propose future preventive measures	**Proponent**

8.6 Auditing of ESMMP

The contractor and the supervising consultant shall conduct regular audits to the ESMMP to ensure that the system for implementation of the ESMMP is operating effectively. The audit shall check that a procedure is in place to ensure that:

- The ESMMP being used is the up to date version;
- Variations to the ESMMP and non-compliance and corrective action are documented;
- Appropriate environmental training of personnel is undertaken;
- Emergency procedures are in place and effectively communicated to personnel;

- A register of major incidents (spills, injuries, complaints) is in place and other documentation related to the ESMMP; and
- Ensure that appropriate corrective and preventive action is taken by the Contractor once instructions have been issued

8.7 Management Responsibility of ESMMP

In order to ensure the sound development and effective implementation of the ESMMP, it will be necessary to identify and define the responsibilities and authority of the various persons and Organizations which will be involved in the project. The following entities should be involved in the implementation of this ESMMP:

a) Coast Water Works Development Agency

CWWDA will be charged with the responsibility of ensuring that the proposed development has been put up in an environmentally sound manner. CWWDA has a safety team consisting of environmentalist, sociologists and project engineers. This can be enhanced by inclusion of environmental specifications in the tender specifications, selection of renowned environmentally conscious contractors and supervision to ensure that the objectives of this ESMMP are met.

b) National Environment Management Authority (NEMA)

The responsibility of NEMA is to exercise general supervision and co-ordination over all matters relating to the environment and to be the principal instrument of Government of Kenya in the implementation of all policies relating to the environment.

c) The Contractor

The persons/firms contracted to put up the proposed water supply project will be required to comply with the requirements of the ESMMP within this report. To ensure strict compliance, environmental specifications of this ESMMP shall form part of the contract documents. The contractor will prepare the specific ESMP.

d) Consultant

The sourced consultant will have to ensure that the proposed ESMMP is up to date and is being used by the contractor. Periodic audits of the ESMMP will have to be done to ensure that its performance is as expected.

e) County Government of Kilifi

The relevant departmental officers in the above local authorities should be called upon where necessary during project implementation to provide the necessary permits and advisory services to the project implementers.

8.8 Emergency procedure during construction and operation phase of the project

An emergency situation means unforeseen happening resulting in serious or fatal injury to employed persons or the neighbouring communities. The following elements of a conventional emergency response plan are recommended as summarized in Table 8-2 below

Table 8-2: Emergency Response Plan

Emergency Response Plan Components	Actions/Requirements	Actions/Requirements
Potential Emergency	Identification of all potential emergencies associated with the proposed project at the project site, Include, Fires, Accidents & Incidents, water burst, oil spill, Security, and Terrorism etc	• Contractor during construction and Decommissioning phases. • Proponent during operation phase.
Emergency Operations Coordinator (EOC)	Designate a primary and secondary contact person	• Contractor during construction and decommissioning phases. • Proponent during operation phase
Emergency contact Numbers	Give & display contact for Fire station, Ambulance, police, Hospitals, NEMA, OSHA and others	• Contractor during construction and decommissioning phases • Proponent during operation phase
Installation of emergency equipment	• Fire sensors, • Fire alarms, • Fire extinguishers, • Fire hose, • Panic alarm button, • Provision and enforcement of use of PPEs, • Emergency Communication equipment, such as Phone & alarm bells	• Contractor during construction and decommissioning phases. • Proponent during operation phase
Training for emergency response First Aid	• Employees training in the use of emergency equipment • Provision of first aid kits, • First aid management training	• Contractor during construction and decommissioning phases. • Proponent during operation phase.
signage	• Fire sensors • Signage, action poster, alarm bell/ panic button	• Contractor during construction and decommissioning phases. • Proponent during operation phase.
Procedure for rescue and evacuation	• Evacuation plan, • Warning system, • Assembly site	• Contractor during construction and decommissioning phases.

Emergency Response Plan Components	Actions/Requirements	Actions/Requirements
	• Shelter in place plan.	• Proponent during operation phase.
Occupants' emergency contact information	• List of all occupants, residents & their activities	• Proponent during operation phase
ERP review	• Annual ERP review	• Contractor during construction and decommissioning phases. • Proponent during operation phase

When emergency is over, the OSHA coordinator shall notify the workers by putting a message: "ALL CLEAR".

In the event of such an emergency during operation, the workers shall:

a. Alert other persons exposed to danger;

b. Ring the nearest police station and ambulance services.

The proponent has already put measures to respond to emergencies in their premises like alarms and a fire assembly point. These measures are available at the wellfields. Proponent also has trained first aiders and fire marshals who can assist in case of emergencies

All incidents and complaints will be recorded in the contractor's incident reporting system AND reported to the client. All incidences involving deaths, near miss that can lead to incidences should be reported within 24 hrs.

8.9 Environmental Social Management and Monitoring Plan (ESMMP)

The necessary objectives, activities, mitigation measures, and allocation of costs and responsibilities pertaining to prevention, minimization and monitoring of significant negative impacts and maximization of positive impacts for the proposed water supply project LOT 1 - transmission pipeline from Baricho to Kakuyuni tanks project is provided below for the; a) pre-construction stage, b) construction c) operational stage, and d) decommissioning stage respectively.

Table 8-3: Pre-Construction Environmental and Social Management and Monitoring Plan

Activity	Associated Impacts	Management Actions	Responsibilities	Monitoring Indicator	Budget
Seeking approvals from NEMA for ESIA Seeking Approvals of plans from County and National Government	Delay in implementation of the project due to objections and stop orders	• The Contractor shall ensure that all pertinent permits, certificates and licenses have been obtained prior to any activities commencing on site and are strictly enforced/ adhered to; • The Contractor shall maintain a database of all pertinent permits and licenses required for the contract as a whole and for pertinent activities for the duration of the contract	Contractor/ CWWDA	• Degree of completion of set of required approvals / permits issued (%), • Number and type of findings during any audits based on conditions of approvals	~KShs 250,000
Construction of the campsite/yard	Environmental degradation risks	• Undertake ESIA studies for the target camp sites and obtain approval from the relevant authorities (including NEMA) • Isolate through fencing the camp sites from access by the public for their safety. Preferably the camp site should be located on land already cleared land wherever possible • The Contractor's Camp layout shall consider availability of access for deliveries and services and any future works	Contractor	• Environment license • Number of public outcry due to accidents	~Kshs. 500,000

Activity	Associated Impacts	Management Actions	Responsibilities	Monitoring Indicator	Budget
Access to campsites and construction sites	Environmental degradation risks	• Utilize to the extent possible the existing public roads to avoid social and economic disruption • Ensure road safety measures for the construction vehicles to the extent possible by observing all traffic regulations	Responsibility Contractor	• Cases of private land required • Accident's occurrence incidences	Integrated in the works costs
Environmental Training and Awareness	Risks of Environmental degradation risks and occupational health and safety related accidents	• The Contractor and sub-contractors shall be aware of the environmental requirements and constraints on construction activities contained in the provisions of the ESMMP • The Contractor will be required to provide for the appropriate Environmental Training and Awareness as described in this ESMMP in his costs and programming • An initial environmental awareness training session shall be held prior to any work commencing on site, with the target audience being all project affected persons	Responsibility Contractor	• Number of Trainings Held • Availability of Training reports • Attendance list of participants during the training sessions • Minutes of the trainings	~Kshs. 200,000
HIV/AIDS awareness and prevention campaign	Risks of Increased HIV and AIDS	• Sensitize workers and the surrounding communities on awareness, prevention and management of HIV/AIDS and	Contractor	• Number of cases of diseases reported	~Kshs 250,000

Activity	Associated Impacts	Management Actions	Responsibilities	Monitoring Indicator	Budget
	transmission in the area	sexual health and rights through staff training, awareness campaigns, multimedia and workshops or during community Barazas. • Use existing clinics to provide VCT services to construction crew and provision of ARVs for vulnerable community members • Ensure safety of women and girls in provision of VCT services. •		• Rate of absenteeism due to diseases • No of workers trained on HIV/ AIDS	
					Kshs 1.2 million

Table 8-4: Construction Phase: Environmental and Social Management and Monitoring Plan

Activity	Associated Impacts	Management Actions	Responsibilities	Monitoring Indicator	Budget
Earth moving, tank construction and excavations (channelling and site preparations)	• Vegetation Cover destruction	• Reinstatement of the project sites to their original after completion of civil works • All hedges damaged during construction to be reinstated after completion of the Works • The contractor to adhere to the delineated construction work area. • Planting of grass along the way leave and Pipeline friendly tree to be grown after construction	Contractor	• Number of tress cut • Site Demarcated	Contractor to include these costs in his rates
Excavation and vegetation clearing	• Reduced water quality • Siltation • Increased water demand • Increased toxic levels in soil and water	• Proper and compacted back filling. • The contractor to stick to clear delineation of the construction to avoid vegetation loss. • Planting of vegetation cover along the pipeline way leave • Any polluted soil should be handled with care for proper disposal.	Contractor	• No of complaints received in regard to water pollution and reduced water supply	Contractor to include these costs in his rates

Activity	Associated Impacts	Management Actions	Responsibilities	Monitoring Indicator	Budget
		• Concrete mixing shall be done on concrete slabs or a large metal sheet or mortar boards • Maintenance of vehicles to be done strictly at designated place/Drip trays to be used to avoid oil spills.			
Impact on water	• Servicing of machinery • Removal of vegetation leading to erosion • Utilization of water for construction activities and for domestic purposes	• Storing of fuels, oils and chemicals beneath impermeable away from surface drains • The machines to be properly serviced offsite and maintained to avoid spillage of effluents into the water bodies • Water containing pollutants should be kept in a conservancy tank for removal to prevent pollution of the surface water and surface water bodies. • Prompt action to be taken by the contractor in case of any pollution incident.	Contractor	• No of complaints received in regard to water pollution and reduced/interrupted water supply	Contractor to include these costs in his rates

Activity	Associated Impacts	Management Actions	Responsibilities	Monitoring Indicator	Budget
		• Meter and monitor construction water usage while ensuring conservation measures are adopted, and workers sensitized on the same			
Construction activities and materials on site	• Generation of Solid waste	• A site waste management plan should be prepared by the contractor before commencing works • All solid waste will be collected and segregated at a central location at each site and will be stored temporarily until removal to an appropriately permitted disposal site in the vicinity of the site by a licensed waste handler. • No dumping within the surrounding area is to be permitted. Where potentially hazardous substances are being disposed of, a chain of	Contractor	• Number of complaints from community not happy with waste management of spoil material	• Contractor best management practice

Activity	Associated Impacts	Management Actions	Responsibilities	Monitoring Indicator	Budget
		custody document should be kept with the environmental register as proof of final disposal. • Wherever possible reusing and recycling should be carried out. • Maximum reuse of excavated material.			
Servicing of vehicles	• Accidental Oil and fuel Spills and Leaks	• Checking and regular servicing of Equipment. • Re-fuelling at safe designated locations, • Use of spill kits and applications of emergency spill procedures. • Provision of a 20cm layer of sand and ballast at the machinery storage area and diesel tank section, this layer act as sink to potential oil spills and will be replaced when saturated. • Vehicle maintenance to be done in impervious concrete	• Contractor	Incidence of reported cases of water related diseases among the workforce and neighbour community	• No direct cost associated

Activity	Associated Impacts	Management Actions	Responsibilities	Monitoring Indicator	Budget
		platforms and grease and oil traps to be used.			
Trench excavation Road crossings Construction of the tank	• Disruption of public utilities	• Contractor to carry out piloting to locate services such as pipes and cables along the Pipeline Route before commencing excavation works. • Length of excavation to be restricted to sections that can be reinstated within the shortest period possible to minimize time of disruption of services. • Consultation and liaison with the various service providers will be undertaken throughout the project life.	• Contractor	Number of complaints from community due to lack of certain services	• No direct cost associated in his rates

Activity	Associated Impacts	Management Actions	Responsibilities	Monitoring Indicator	Budget
Recruitment of workforce	• Labour influx and sexual offences to minors	• Effective community engagement and strong grievance mechanisms on matters related to labour. • Effective contractual obligations for the contractor to adhere to the mitigation of risks against labour influx • Proper records of labour force on site while avoiding child and forced labour • Fair treatment, non-discrimination, and equal opportunity of workers.	• Contractor	• Available grievance mechanisms • No of locals recruited • Record of workers on site	• No direct cost associated in his rates
Employment	• Human Rights Principles and Gender Inclusivity	• Mainstream Gender Inclusivity in hiring of workers and entire Project Management as required by Gender Policy 2011 and 2/3 gender rule. • Comply to provisions of guidelines on incorporating Human Rights Standards and Principles, including Gender, in Programme Proposals for Bilateral German Technical and Financial Cooperation	Contractor	• No of women recruited	No direct cost associated

Activity	Associated Impacts	Management Actions	Responsibilities	Monitoring Indicator	Budget
Migration and immigration	• Increased Transmission of HIV/AIDS	• Sensitize workers and the surrounding communities on awareness, prevention and management of HIV/AIDS and sexual health and rights through staff training, awareness campaigns, multimedia and workshops or during community Barazas. • Use existing clinics to provide VCT services to construction crew and provision of ARVs for vulnerable community members • Ensure safety of women and girls in provision of VCT services.	Contractor	• Number of cases of diseases reported • Rate of absenteeism due to diseases • No of workers trained on HIV/ AIDS • Number of gender-disaggregated toilets constructed	~Kshs 300,000

Activity	Associated Impacts	Management Actions	Responsibilities	Monitoring Indicator	Budget
Immigration and migration to seek for job opportunities	• Increased spread of Covid 19 among workers	• The Contractors will develop a SOPs for managing the spread of Covid-19 during project execution and submit them for the approval of the Supervision Engineer and the Client before mobilization. The SOPs shall be in line with the World Bank guidance on COVID-19, Ministry of Health Directives and site-specific project conditions; • Mandatory provision and use of appropriate Personal Protective Equipment (PPE) shall be required for all project personnel including • Avoid concentrating of more than 15 workers at one location. Where there are two or more people gathered, maintain social distancing at least 2 meters. All workers and visitors accessing worksites every day or attending meetings shall be subjected to rapid Covid-	Contractor	• Availability of SOP(s), Training material, PPE, sanitizing facilities • No of workers sensitized on COVID-19 • No of hand-washing facilities installed; facemasks and temperature monitors secured, etc.	Contractor to include these costs in his rates

Activity	Associated Impacts	Management Actions	Responsibilities	Monitoring Indicator	Budget
		19 screening which may include temperature check and other vital signs; • Install handwashing facilities with adequate running water and soap, or sanitizing facilities at entrance to work sites including consultation venues and meetings and ensure they are used; • Ensure routine sanitization of shared social facilities and other communal places routinely including wiping of workstations, door knobs, hand rails etc;			
	• Spread of COVID-19 amongst community members during consultations processes	• Electronic means of consulting stakeholders and, holding meetings, whenever possible, shall be encouraged whenever feasible. One-on-one engagements for the PAPs while observing social distance and adhering to PPE wearing shall be enforced;	All the Project components Supervising Eng. & Contractor Communication / stakeholder engagement	• Availability of SOP(s), Training material, PPE, sanitizing facilities • Availability of SOP(s), Training material,	

Activity	Associated Impacts	Management Actions	Responsibilities	Monitoring Indicator	Budget
		• Avoid concentrating of more than 15 community members at one location. Where there are two or more people gathered, maintain social distancing at least 2 meters • The team carrying out engagements within the communities on one-on-one basis will be provided with appropriate PPE for the number of people they intend to meet; • Use traditional channels of communications (TV, newspaper, radio, dedicated phone-lines, public announcements and mail) when stakeholders do not have access to online channels or do not use them frequently. Ensure to provide and allow participants to provide feedback and suggestions;	expert in the Team/ Stakeholder engagement expert	PPE, sanitizing facilities • No. of participants registered online. • Attendance registers of all meetings held • Evidence of use of electronic media for information disseminatio n/engageme nt e.g. printed electronic mails, addresses of video links created etc	

Activity	Associated Impacts	Management Actions	Responsibilities	Monitoring Indicator	Budget
		• Hold meetings in small groups, mainly in form of FGDs if permitted depending on restrictions in place and subject to strict observance of physical distancing and limited duration. • In situations where online interaction is challenging, disseminate information through digital platform (where available) like Facebook and WhatsApp & Chat groups. • Ensure online registration of participants, distribution of consultation materials and share feedback electronically with participants.			

Activity	Associated Impacts	Management Actions	Responsibilities	Monitoring Indicator	Budget
Immigration and migration to seek for job opportunities	• Increased crime and insecurity	• Contractor and Supervision Team to liaise regularly with the Local Administration and Police Service to address any security and crime arising during project implementation. • Contractor to provide 24 hours' security to Workforce Camps, Yards, Stores and to the Supervising Team's Offices	Contractor	• No of crime related incidences reported in regard to the project	No associated cost
Construction activities	• Impact on cultural heritage	• Use of "chance find" procedures	Contractor	• No of cases reported	No direct associated cost
Emissions from Construction plant and equipment and vehicles	• air pollution and dust generation	• The contractor to comply the provisions of EMCA 2015 (Air Quality Regulations 2014), to be enforced by the Supervising Engineer. • Workers shall be trained on management of air pollution from vehicles and machinery. • All construction machinery shall be maintained and	Contractor	• Cases of respiratory complication at nearby health center	Inclusive in BOQ

Activity	Associated Impacts	Management Actions	Responsibilities	Monitoring Indicator	Budget
		serviced in accordance with the suppliers' specifications • The removal of vegetation shall be avoided until such time as clearance is required and exposed surfaces shall be re-vegetated or stabilized as soon as practically possible • The contractor shall not carry out dust generating activities (excavation, handling and transport of soils) during times of strong winds • Vehicles delivering construction materials and vehicles hauling excavated materials shall be covered to reduce spills and windblown dust • Water sprays shall be used on all earthwork's areas within 200 metres of human settlement			

Activity	Associated Impacts	Management Actions	Responsibilities	Monitoring Indicator	Budget
		especially during the dry season			
Machinery activities and servicing	• Noise and excessive vibrations	• Contractor will comply with provisions of EMCA 2015 (Noise and Excessive Vibrations Regulations of 2009) • The Contractor shall keep noise level within acceptable limits (60dBA for sensitive locations (residential, educational, health institutions etc) and 75 dBA for other areas during the day) and construction activities shall, where possible, be confined to normal working hours in the residential areas • Hospitals and other noise sensitive areas such as schools shall be notified by the Contractor at least 5 days before construction is	Contractor	• No of complaints received from neighbouring residents	No direct cost associated

Activity	Associated Impacts	Management Actions	Responsibilities	Monitoring Indicator	Budget
		due to commence in their vicinity. As feasible, noisy construction activities of the reservoir tank in Kakuyuni high school shall be planned to occur outside learning hours for least disruption • Undertake Noise and Excessive Vibration Assessments • Effective use of appropriate PPE (ear plugs or muffs) by exposed workers and Proper maintenance of machines.			
Occupational Health and Safety	• Risk of accidents at work site	• Contractor to develop a site Healthy and Safety Plan prior to the commencement of works to be approved by the Supervising Engineer. • Construction Workers and the Supervising Team to be provided with appropriate	Contractor	• Availability of incidences Occurrence book on site • No of complains from workers for lacking water or sanitation	KShs. 500,000.

Activity	Associated Impacts	Management Actions	Responsibilities	Monitoring Indicator	Budget
		Personal Protective Equipment including gloves, gumboots, overalls and helmets. Use of PPE to be enforced by the Supervising Engineer • Provide task specific PPEs for welding of steel pipes • Fully stocked First Aid Kits to be provided within the Sites, Camps and in all Project Vehicles. Trained first aiders to be available on site at any time works are ongoing. The ratio of first aiders to workers shall be in line with the OSHA First Aid Rules • Isolate the site for access by the local communities during the construction for their safety and health. Camps and Work Sites to be fenced off and Security Guards provided to restrict		facilities	

Activity	Associated Impacts	Management Actions	Responsibilities	Monitoring Indicator	Budget
		access to members of the public. • Strict use of warning signage and tapes where the trenches are open and at other active construction sites • Contractor to Employ and train Road Safety Marshalls who will be responsible for management of traffic on site • Contractor to provide a Traffic Management Plan during construction to be approved by the Supervising Engineer • Provision of adequate potable drinking water to workers • Recording and reporting of all safety and health incidents on site.			

Activity	Associated Impacts	Management Actions	Responsibilities	Monitoring Indicator	Budget
Traffic management on site	• Traffic congestion	• The contractor shall develop a traffic management plan; • The Contractor should provide temporary road signs or notices to indicate ongoing works; • The Contractor together with the Resident Engineer should Plan itineraries for site traffic on a daily basis and avoid peak traffic periods;	Contractor	• Erected traffic related signage's • No of complaints raised by road users • Availability of traffic management plan	No direct cost associated
Generation of income	• Increased GBV	• The Contractor shall require his employees, sub-contractors, sub-consultants, and any personnel thereof engaged in construction works to individually sign and comply with a Code of Conduct with specific provisions on protection from sexual exploitation and abuse • The contractor will implement provisions that ensure that gender-based violence at the community	Contractor Local CBO Local NGO	• Mitigation plan for GBV occurring at the community level as a result of project implementation • Number of GBV cases happening at the community level that	No direct cost associated

Activity	Associated Impacts	Management Actions	Responsibilities	Monitoring Indicator	Budget
		level is not triggered by the Project, including: - effective and on-going community engagement and consultation, particularly with women and girls; - review of specific project components that are known to heighten GBV risk at the community level, e.g., compensation schemes; employment schemes for women; etc. • Ensure clear human resources policy against sexual harassment that is aligned with national law • Integrate provisions related to sexual harassment in the employee COC • Ensure appointed human resources personnel to manage reports of sexual harassment according to policy		receive survivor-centered referral and care	

Activity	Associated Impacts	Management Actions	Responsibilities	Monitoring Indicator	Budget
		• the contractor shall develop specific plan for mitigating these known risks, e.g. sensitization around gender-equitable approaches to compensation and employment; etc • The contractor will ensure adequate referral mechanisms are in place if a case of GBV at the community level			
	• Sexual Exploitation and Abuse by project workers against community members	• Develop and implement a SEA action plan with an Accountability and Response Framework as part of the C-ESMP. The SEA action plan will follow guidance on the World Bank's Good Practice Note for Addressing Gender-based Violence in Investment Project Financing involving Major Civil Works (Sept 2018). • The SEA action plan will include how the project will	Contractor Local CBO Local NGO	• SEA Action Plan • Code of Conduct • Number of staff trainings • SEA FP • Community Liaison trained in PSEA • IEC materials for workers sites and	No direct cost associated

Activity	Associated Impacts	Management Actions	Responsibilities	Monitoring Indicator	Budget
		ensure necessary steps are in place for: - Prevention of SEA: including COCs and ongoing sensitization of staff on responsibilities related to the COC and consequences of non-compliance; project-level IEC materials; - Response to SEA: including survivor-centred coordinated multi-sectoral referral and assistance to complainants according to standard operating procedures; staff reporting mechanisms; written procedures related to case oversight, investigation and disciplinary procedures at the project level, including confidential		community • Discrete SEA reporting pathway • Relevant policies, e.g. investigations and discipline and whistle blower protection • Monthly minutes from SEA coordination meetings	

Activity	Associated Impacts	Management Actions	Responsibilities	Monitoring Indicator	Budget
		data management; - Engagement with the community: including development of confidential community-based complaints mechanisms discrete from the standard GRM; mainstreaming of PSEA awareness-raising in all community engagement activities; community-level IEC materials; regular community outreach to women and girls about social risks and their PSEA-related rights; • Management and Coordination: including integration of SEA in job descriptions, employments contracts, performance appraisal systems, etc.;			

Activity	Associated Impacts	Management Actions	Responsibilities	Monitoring Indicator	Budget
		development of contract policies related to SEA, including whistle-blower protection and investigation and disciplinary procedures; training for all project management; management of coordination mechanism for case oversight, investigations and disciplinary procedures; supervision of dedicated PSEA focal points in the project and trained community liaison officers.			
All construction activities	• Workers and supervision team health and sanitation	• Contractor to provide clean and adequate sanitation facilities for the workers at all times separate for men and women • Contractor shall also provide clean drinking water at the construction	Contractor	• Inspection/ observation / reports • Number of sanitation facilities • sanitation facilities cleanliness • Number of	No direct cost associated

Activity	Associated Impacts	Management Actions	Responsibilities	Monitoring Indicator	Budget
		site for his workers at all times		disease outbreaks	
Corporate Social Responsibility to the Kakuyuni Boys Secondary School	• Usage of school's land for construction of the reservoir • Impact associated with construction activities such as noise and air pollution	• CWWDA through the Works Contractor to construct a fully furnished modern library for the school. • Management of noise and air pollution as discussed in the previous sections above • Drawing up of MoU between the school and the Client	CWWDA, Contractor, Kakuyuni Boys Secondary School	• Signed MoU • Constructed fully furnished modern library • Number of complaints received from the school due to noise and air pollution	The CSR budget is included in the Works Contract
					Kshs. 2,000,000

Table 8-5: Operational Phase: Environmental and Social Management and Monitoring Plan

No.	Issue	Action required	Responsibility	Monitoring Indicator	Provisional Budget
2	Risk of water pipeline bursts leading water wastages (Non-Revenue Water percentages increase)	• Risk of pipeline bursts is low as the pipeline design, including the selection of pipe material with appropriate pressure rating • Regular check, repair and maintenance of the pipeline • Activate a community watch group for information sharing on the status of the pipeline	KIMAWASCO /MAWASCO	▪ Number of reported cases water bursts	To be established at operation phase and included in the operation of the projects
3	Risk of vandalism and illegal connection to the water line pipeline	• This will require constant inspection by KIMAWASCO /MAWASCO officials and installation of leak and burst detectors at designated areas along the pipeline. • Conduct public sensitization programs on importance not interfering with the water pipeline and the need to seek official water connection from KIMAWASCO /MAWASCO • Prosecution of offenders as required by Kilifi County By laws	KIMAWASCO /MAWASCO	▪ Number of illegal connection cases reported	To be established at operation phase and included in the operation of the projects
4	Increased Generation of both solid and liquid waste	• Provide adequate waste disposal facilities. Ensure collection of all solid waste from generation points, safe transportation to a central point where they are sorted out and safely disposed according to type to protect the environmental resources. • Put in place adequate and efficient sanitary facilities for handling liquid waste especially	KIMAWASCO /MAWASCO	▪ No of complaints unsatisfied with mode of waste disposal	To be established at operation phase and included in the operation of the projects

No.	Issue	Action required	Responsibility	Monitoring Indicator	Provisional Budget
		waste water to protect the ocean from pollution. This should be included in sanitation plans for the county. • In the long term the respective WSPs should invest in a waste water collection and treatment system for Kilifi County to ensure proper handling of waste water. This would also help in protecting local environment from possible contamination with direct sewage.			
5	Impact from periodic water release of washout valves and tank overflow	• Periodic water released should be recycled into the system, where feasible. • Ensure that the washouts are sited properly and that the water is channelled to the nearby drainage system or a water course.	KIMAWASCO /MAWASCO	▪ No of complaints from adjacent land owners	To be established at operation phase and included in the operation of the projects
6	Increased generation of waste water	• Pit latrines can be used in areas where the other services are not available or feasible. • The client to consider construction of a sewerage system in the project areas • Provide adequate waste disposal facilities. Ensure collection of all solid waste from generation points, safe transportation to a central point where they are sorted out and safely disposed according to type to protect the environmental resources.	KIMAWASCO /MAWASCO	▪ Incidences of water pollution and nuisance from waste water	To be established at operation phase and included in the operation of the projects

No.	Issue	Action required	Responsibility	Monitoring Indicator	Provisional Budget
		• Put in place adequate and efficient sanitary facilities for handling liquid waste especially waste water to protect the ocean from pollution. This should be included in sanitation plans for the county. • In the long term the respective WSPs should invest in a waste water collection and treatment system for Kilifi County to ensure proper handling of waste water. This would also help in protecting local environment from possible contamination with direct sewage.			
	Confined space entry at the tank site, Repairs on busy roads, Electromechanical works repair risks etc	• Provide standard safety procedures/guidelines for all routine pipeline maintenance works. Responsible workers must be trained on the same • Provide safe access arrangements suitable for reservoir in liaison with the school managers • Create awareness on existence of the pipeline on the way leaves • Have trained personnel to attend to all repairs with trained skill to work in confined spaces	MAWASCO KIMAWASCO	▪ No of complaints received	To be established at operation phase and included in the operation of the projects

No.	Issue	Action required	Responsibility	Monitoring Indicator	Provisional Budget

8.10 Grievance Resolution Mechanism

This ESIA establishes all the project proposed works and have established Grievance Redress Mechanism (GRM). In addition, this ESIA has enhanced the GRM through the below described three-tier Grievance Mechanism.

(i) Local committee

It is desirable to resolve all the grievances at the community level to the greatest extent possible. The community or settlement level grievance mechanism must be credible and generally acceptable. The grievance redress mechanism will aim to solve disputes at the earliest possible time in the interest of all parties concerned. The committee comprises of Community Elders, Women's Representative, Youth Representative, Representative of Vulnerable Groups and the Location Chief who chairs the committee. The officer addressing construction-related grievances will give opportunity to the local communities and the public to express any grievances related to project.

This committee will sit at the Chiefs office. The following procedure is proposed:

- A PAP registers a grievance and within one working day, the committee members are alerted of the case;
- The affected person is immediately informed of the next date of the scheduled hearing. Depending on the case load, a maximum of 7 working days should be given between the date that a case is recorded and the date when the hearing is held;
- The committee meets once every seven-calendar days to deal with emerging cases. At these meetings, hearings with the affected persons and related witnesses will be held;
- The committee will communicate its judgment to the affected persons within 3 working days;
- If no resolution is met or the PAP is not satisfied with the judgment, the case is moved to the next level by the committee. This will be done within 5 working days of the hearing.

(ii) Mediation Committees

In case the grievance is not resolved at first tier, the GRC handling grievances will be enjoined by the project committee. This committee will sit once a month at the County Government Office. The following procedure is proposed:

- A grievance is logged at the County Government Office and within five working days, a notice is sent out to all the interested parties informing them of the date of the hearing;
- A hearing will then be held within thirty days of the grievance being raised;
- In the event that investigations and technical witnesses are required, a maximum of thirty (30) calendar days will be taken prior to a hearing being held;

- The committee's decision will be communicated in writing within 5 working days of the date of the hearing;
- If the committee does not resolve an issue, the affected persons are free to go to the Land and Environment Court.

(iii) Land and Environment Courts of Law

If complainants are not satisfied by the decision of the first two tiers of the Grievance Mechanism, they can seek redress from the Courts of Law.

1. Procedure of receiving and Resolution of complaints

a) Step 1: Receipt of complaint/grievance

A verbal or written complaint from a PAP or community member will be received by the Grievance Officer (GO) on behave of the GRC (refer to Box -1 for the roles of the GO) or an assigned contract officer in a given administrative jurisdiction/authority near to community level and recorded in a grievance log which will be held in the offices of the contractor and the REs office.

Box 1: Role of a Grievance Officer

A Grievance Officer (GO), who will be a member of the Project Implementation Team, will lead the grievance mechanism. Principal responsibilities of the GO will include:

a) Recording the grievances, both written and oral, of the affected people, categorising and prioritising them and providing solutions within a specified time.
b) Discussing grievances on a regular basis with the GRC and coming up with decisions/actions regarding issues that can be resolved at that level.
c) Informing the GRC of serious cases within an appropriate timeframe.
d) Reporting to the aggrieved parties about developments regarding their grievances and the decisions of the GRC and mediation committee.
e) Providing inputs into the monitoring and evaluation process.

Grievances will be received by a contact person who would then hand over the received complaints to the GO, for entering into the grievance log using the grievance form.
The grievance log will indicate grievances, date opened/lodged, actions taken to address or reasons why the grievance was not acted upon (e.g., the grievance was not related to the impacts of the project), information provided to complainant and date on which the grievance was closed.
Grievances can be lodged at any time, either directly to the logbook in the contractor's site office or the REs offices. The process of lodging complaint is outlined below:

(i) The GO will receive a complaint from the complainant.
(ii) The GO will ask the claimant questions in their local language write the answers in English and enter them in English onto the grievance form.
(iii) The local leader (representative of an independent local civil society organisation) and the complainant both sign the grievance form after they have both confirmed the accuracy of the grievance.
(iv) The GO lodges the complaint in the grievance log.

b) Step 2: Determination of Corrective Action

If in their judgment, the grievance can be solved at this stage and the GO and GRC will determine a corrective action in consultation with the aggrieved person. A description of the action, the time frame within which the action is to take place, and the party charged with implementing the action will be recorded in the grievance data base.

Grievances will be resolved and the status reported to complainants within 30 days. If more time is required, this will be clearly communicated and in advance to the aggrieved person. In cases that are not resolved within the stipulated time, site investigations will be undertaken and results discussed in the monthly meeting with the affected persons. In some instances, it may be appropriate to appoint independent third parties to undertake the investigations.

c) Step 3: Meeting with the complainant

The proposed corrective action and the timeframe in which it is to be implemented will be discussed with the complainant within 30 days of receipt of the grievance. Written agreement to proceed with the corrective action will be sought from the complaint (e.g., by use of an appropriate consent form). If no agreement is reached Step 2 will be revisited.

d) Step 4: Implementation of Corrective Action

Agreed corrective actions will be undertaken by the project developer or its contracts within the agreed timeframe. The date of the completed action will be recorded in the grievance database.

e) Step 5: Verification of corrective action

To verify satisfaction, the aggrieved person will be approached by the GO and GRC to verify that the corrective action has been implemented. A signature of the complainant will be obtained and recorded in the log and/or on the consent form . If the complainant is not satisfied with the outcome of the corrective action, additional steps may be undertaken to reach agreement between the parties. If additional corrective action is not possible, alternative avenues maybe pursued.

f) Step 6: Action by Grievance Redress Committee

If the complainant remains dissatisfied and a satisfactory resolution cannot be reached, the complaint will be handled by the Mediation Committee, this committee is made up of the below listed persons.

(i) One representative of the Administration; - National Government
(ii) One representative of County Administration; - County Government
(iii) One representative of the client acting as an observer;
(iv) One representative of the construction contractor, acting as an observer
(v) Three representatives of the affected people, amongst them at least one woman, chosen i.e. from community-based organizations, elders, farmer.

This committee must have a quorum of at least three persons. Decisions will be reached by simple majority. The Grievance Committee should be constituted for as long as grievances are being lodged.

Once the Mediation Committee has determined its approach to the lodged grievance, this will be communicated to the GO, who will communicate this to the complainant. If satisfied, the complainant signs to acknowledge that the issue has been resolved satisfactorily. If the complainant is not satisfied, however, the complainant notes the outstanding issues, which may be re-lodged with the Grievance Committee or the complainant may proceed with judicial proceedings.

g) Step 7: Alternative Action/Judicial Recourse and National Land Commission

In case this mechanism will not lead to resolution of the grievance, the complaint is free to seek redress at the courts of law at any given time.

Capacity-Building for the Grievance Officer and Grievance Committees

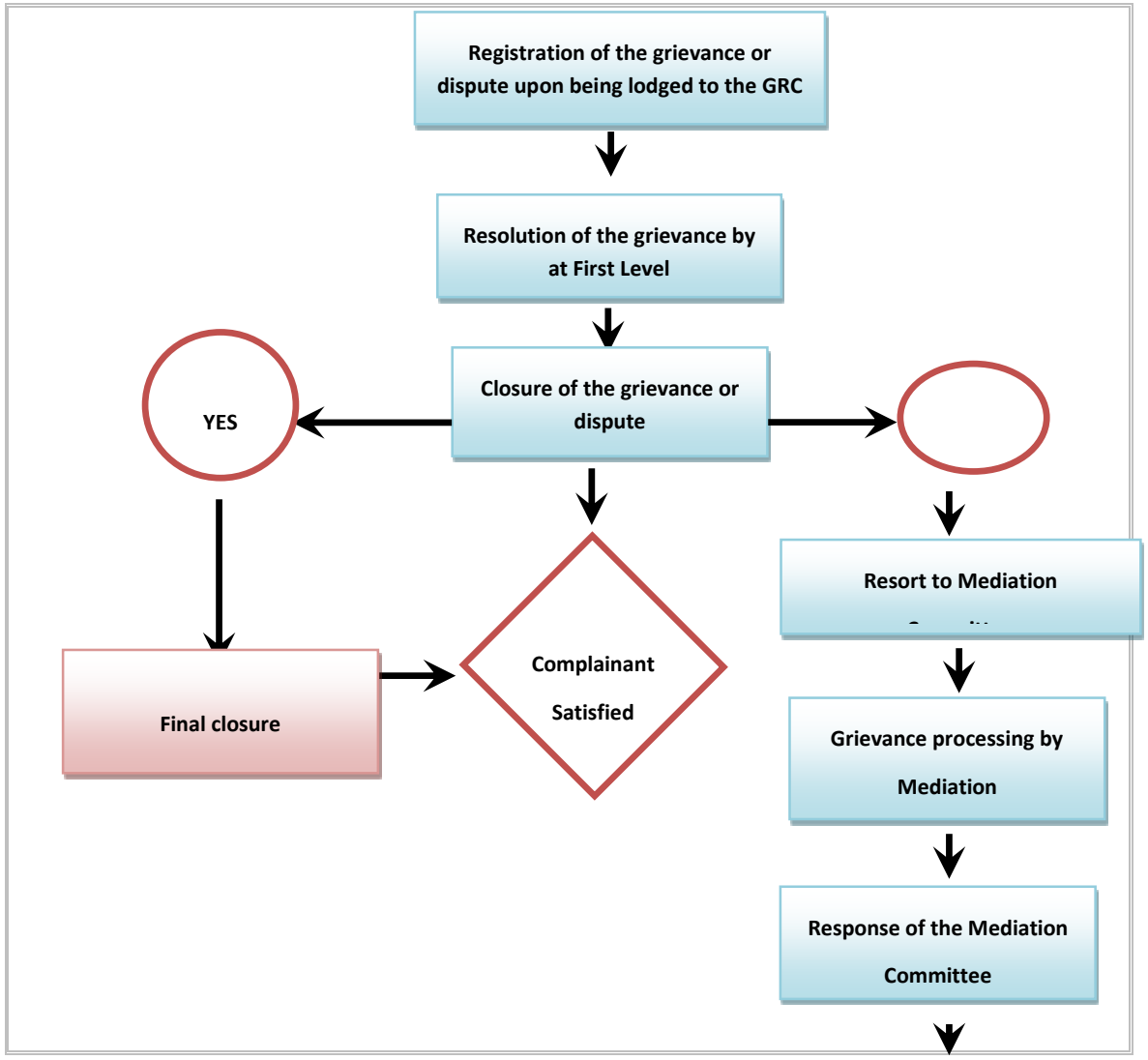
It will be important for the GO to be appointed based on his/her experience and training in conflict resolution through mediation and reconciliation. It will also be important for the GO to have sufficient skills in data management, including data entry, data analysis and storage. This notwithstanding, it will be important that steps are taken to orient and build the capacity of the GO as part of the project implementation team in conflict resolution procedures, such as mediation and reconciliation, and other management areas such as record-keeping, report-writing and Information and communications technology (ICT) equipment management.

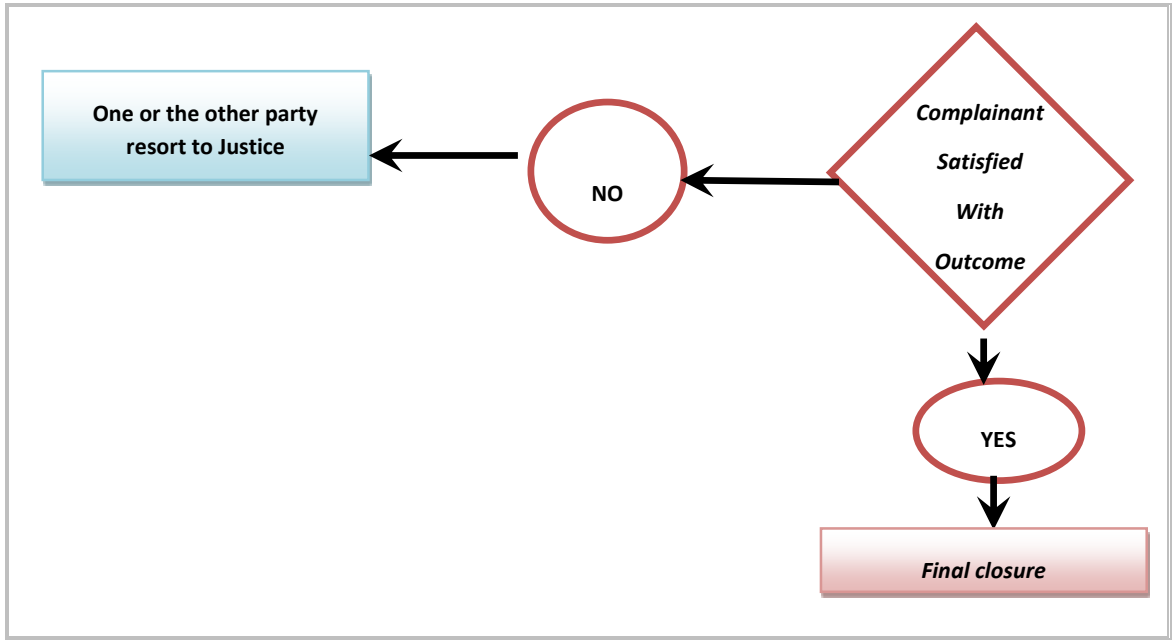
The Grievance Committee members will also need to be oriented to the grievance management system suggested in the ESIA. The Grievance Committee members will also need to be built around issues of conflict identification, conflict information analysis and conflict resolution as provided for in the land legislation.

Other Alternatives

The other alternative recourse suggested as a last resort is for the complainant to seek redress in courts of law.

GRIEVANCE RESOLUTION PROCEDURE




Complainant Satisfied With Outcome
NO
One or the other party resort to Justice
YES
Final closure

CHAPTER 9 : CONCLUSION AND RECOMMENDATIONS

9.1 Conclusion

This ESIA CPR has identified the adverse impacts and as appropriate, recommended feasible and attainable mitigation measures. In this light, it is imperative that the Environment Management and Monitoring Plan be fully implemented. The Plan should also feed into the proponent's evident commitment to environmental conservation.

Project activities that are envisaged to have potential less significant negative impacts at different phases of the project have been assessed in detail in this Report and appropriate Mitigation Measures proposed.

In order to mitigate the potential negative impacts and to make the Project environmentally and socially sounder, an Environmental and Social Management and Monitoring Plan (ESMMP) has been prepared. It includes the Mitigation Plan, the Monitoring and Enforcement Requirements; and the Responsible Persons/Organizations. All the recommendations/ mitigations mentioned in the assessment will be financed, and incorporated in the construction and supervision contracts.

The findings of the ESIA based on the disclosed project details and the baseline site assessment indicated that

- Rehabilitation works will be carried out within the existing infrastructure that are free from encroachment. The Environmental and Social Scoping undertaken for the project indicate that the investment will result in low impact on biological environment; however, the Project triggers World Bank OP 4.01 on Environmental and social Assessment.
- Provisional Budget of Kenya Shillings 2.0 million is required for implementation of mitigation measures of potential negative environmental impacts identified in the report during the construction phase.
- The proposed project is desirable and will support the realization of national and county development goals as outlined in a number of national strategies such as Vision 2030, the Kilifi County Integrated Development Plan (CIDP 2018-2022).
- The overall objective of project is to improve water supply in the towns of Malindi, Kilifi, Watamu and Gongoni and their surrounding environ of Kilifi.County. Supply of water is in line with the spirit of Article 43 of the National Constitution of Kenya on access to clean and safe water for all.

- The project is also in line with the National Water Policy (2012) obligation for increased per capita water availability above the international benchmark of 1000 m^3 by 2030.
- The proposed project will also contribute towards the realization of the goal of Kenya Vision 2030 Goal of achieving universal access in water and sanitation services by 2030.
- The project will not be implemented in an environmentally sensitive areas (ESAs).
- At international level, the proposed project will significantly contribute towards the realization of the UNSDG-6 on ensuring universal access to safe and affordable drinking water for all by 2030.
- The EIA process has established that the proposed project is well aligned with the vision of Kilifi County Integrated Development Plan, 2018-2022 to address the challenges of water shortage in the County.

9.2 Recommendation

This project is feasible with a perspective of social economic evaluation, financial evaluation and environmental assessment, which has stable economic benefit and strong anti-risk capacity. The analysis of the project alternative options showed that the project is indispensable. Therefore, the project is necessary, and should be implemented as soon as possible. A comprehensive Environmental and Social Management Plan (ESMP) and Environmental Monitoring Strategy has been developed of which the proponent will implement to ensure minimal damage to the environment. We therefore, recommend the project for NEMA approval because it: -

a) is well within the spirit of the National Constitution;
b) will support in the implementation of the National Water Policy (2012);
c) will contribute towards the realization of goals for Kenya's Vision 2030 goals, and
d) Will not violate the strategies for the National Spatial Plan 2015-2045.

In view of the findings of the ESIA, the proposed project is considered as environmentally sound. Further, the project proponent is willing to guarantee that the potential adverse impacts whose means of mitigation have been disclosed in this report and most of them have already been incorporated in the project design will be effectively implemented. On the basis of these findings, it is recommended that the proposed LOT 1 - Transmission Pipeline from Baricho Water Works to Kakuyuni Tanks in Kilifi for supply of water in the towns of Malindi, Kilifi, Watamu and Gongoni and their surrounding environ in Kilifi County be approved. Further, NEMA should issue the proponent with an EIA license as required by Kenya's environmental laws.

REFERENCES

1. Design Report for 2nd Baricho_Kakuyuni Pipeline (SARI/SGAP/GATH JV, August 2021)
2. Environmental and Social Impact Assessment Project Report for Baricho Immediate Works-LOT 3: Kakuyuni/Gongoni & Kakuyuni/Kilifi Interconnection Pipelines Works carried out under Contract No.: CWSB/WaSSIP-AF/C/25/2013
3. Kenya gazette supplement No 62, (legislative Supplement No 16) The Environmental Management and Coordination Act) No.8 of 199) *by government printer, Nairobi*
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14. Kilifi County Integrated Development Plan (CIDP) – 2018 - 2022.
15. Kenya Population-based HIV Impact Assessment (KENPHIA) 2018
16. Biodiversity Status of Arabuko Sokoke Forest. Kenya, 2017
17. KNBS, Economic Survey 2021

ANNEXES

Annex 1: Lead Expert NEMA License

FORM 3

nema

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY(NEMA)
THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT
ENVIRONMENTAL IMPACT ASSESSMENT/AUDIT (EIA/EA) PRACTICING LICENSE

License No : NEMA/EIA/EAPL/13777
Application Reference No : NEMA/EIA/EL/18256

M/S GODWIN LIDAHULI SAKWA
(Individual or firm) of address

P.O. Box 18075-00500, NAIROBI

is licensed to practice in the capacity of a (Lead Expert/Associate Expert/Firm of Experts) Lead Expert registration number 2492 in accordance with the provision of the Environmental Management and Coordination Act Cap 387.

Issued Date: 1/20/2021 Expiry Date: 12/31/2021

Signature.....

(Seal)
Director General
The National Environment Management Authority

P.T.O.

ISO 9001 : 2008 Certified

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Annex 2:Layout plan

General project layout.

Annex 3: Minutes and attendance sheet

CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF PRELIMINARY DESIGNS, DETAILED DESIGNS, SAFEGUARDS DOCUMENTS AND TENDER DOCUMENTS AND CONSTRUCTION SUPERVISION OF SECOND BARICHO – KAKUYUNI WATER PIPELINE AND TRANSMISSION PIPELINES TO KILIFI AND GANDA TANKS

MINUTES FOR PUBLIC CONSULTATION MEETINGS AND KEY STAKEHOLDERS INTERVIEWS HELD ON 6TH MAY 2021 AT LANGO BAYA

NATURE OF MEETING:	**PUBLIC CONSULTATION**
PARTIES IN ATTENDANCE:	**CONSULTANT & COMMUNITY**
DATE:	**MAY 6TH , 2021**
VENUE:	**LANGO BAYA**

MINUTES FOR PUBLIC CONSULTATION MEETINGS AND KEY STAKEHOLDERS INTERVIEWS HELD ON 6TH MAY 2021 AT LANGO BAYA

MEMBERS PRESENT- LIST OF ATTENDANCE IS ATTACHED

No.	Name	Organisation	Designation
1.	Boniface Kogi	SGAPI SARI GATH	A.E
2	Lydia Mbogo	SGAPI SARI GATH	E.O
3	Joseph Mulusya	SGAPI SARI GATH.	Surveyor
4	Mercy Makadu	SGAPI SARI GATH	Sociologist
5	Fredrick Charo		Assistant Chief
6	Rehema Said		Resident
7	Onesmus Masha		Resident
8	Mwanakombo Bambulo		Resident
9	Samuel Wanje		Resident
10	Jesca Dama		Resident
11	Kahonzi Baya		Resident
12	Nelson Mbogo		Resident
13	Mwalimu Kahindi		Resident
14	William Baya		Resident
15	Christine Chengo		Resident
16	Florence Charo		Resident
17	Irene Kitsao		Resident
18	Franklin Kaingu		Resident
19	Jonathan Mwagandi		Resident
20	Margaret Kamande		Resident
21	Hannington Mulikya		Resident
22	Geoffrey Muriithi		Resident
23	Wilson Sulubu		Resident
24	Harrison Kadenge		Resident

25	David Gunga		Resident

ABBREVIATIONS

AE	Assistant Engineer
EO	Environmental officer
AOB	Any Other Business
Consultant	SARI GATH SGAPI

AGENDA

1. Introduction
2. Reason for stakeholder Consultation
3. Current Water Sources and Challenges
4. Interventions to address the Challenges
5. Potential project Impacts (Positive and Negative)
6. Comments and Responses
7. A.O.B
8. Adjournment

MINUTE NO:	DESCRIPTION	ACTION BY
Mtg.1-01	**INTRODUCTION** The Assistant Chief called the meeting to order at 1000 HRS. The meeting began with a word of prayer that was led by one of the residents. This was followed by brief self-introduction by all residents. The chief then invited the consultants (Assistant Engineer, Environmental Officer and Surveyor) who introduced themselves then stated the agenda of the meeting that was adopted.	**All**
Mtg.1-02	**REASON FOR STAKEHOLDER CONSULTATION** The Assistant Engineer gave a brief introduction of the Project scope. Then later welcomed the Environmental officer who cited the reason for the stakeholder consultation, as a legal requirement that to create awareness of the proposed intervention to all relevant stakeholders that should be an opportunity for them to air their views and concerns.	**Consultant**
Mtg.1-03	**CURRENT WATER SOURCES AND CHALLENGES** The stakeholders commented on the fact that water has been a major challenge due to its frequent shortages, high prices and occasional broken pipes despite the fact that they lived near the water source.	**Consultant**
Mtg.1-04	**INTERVENTIONS TO ADDRESS THE CHALLENGE** The Assistant Engineer mentioned the project implementation timelines and stated that the project would tentatively begin around October 2021 and take about a year to complete. He further stated that the pipes of DN 700 for 29 km and DN 600 for 12.5 km, there would also be a 5,000 m^3 tank.	**Consultant**
Mtg.1-05	**POTENTIAL PROJECT IMPACTS (POSITIVE and NEGATIVE)** **Positive project impact** • Accessibility to clean and reliable water, hygiene and sanitation, reduced water and Improved sanitation burden to women, increased land values in the project area. **Negative project impact** • Impacts on biophysical environment(Vegetation destruction, soils, water resources pollution or over abstraction)	**Consultant**

	• Health and Safety Impacts (Noise and vibrations, air pollution, accidents on site, fire disasters, public health)	**Consultant**
Mtg.1-07	**Filling in the questionnaire** The community members were taken through the questionnaire as they fill ESIA expert. **<u>COMMENTS AND RESPONSES</u>** **Comment – Wayleave** The residents requested know if the project will affect them in terms of displacement in anyway. **Response** The consultant informed the meeting that there will be no Demolitions or Displacements since the way leave is clear and there is enough space for the pipeline to be constructed. **Comment – Job Requirements** The residents wanted to know if they will have to produce NHIF, NSSF and Certificate of Good conduct before they can be recruited. **Response** They were informed that those requirements are not only mandatory but also a basic requirement of the law of Kenya, however, for casual labourers an Identification Card is mandatory. **Comment – Backfilling request** The residents wanted to know how prompt the backfilling will be once excavation has been done. **Response** The consultant informed the meeting that No access points will be left open without provision of access points or being backfilled for more than a day. **Comment – Compensation** The community wanted to know if there will be any form of compensation **Response** For the pipeline route, it was noted that it will use the existing road reserve. The new proposed tank will be constructed at Kakuyuni	Resident Consultant Resident Consultant Resident Consultant Resident

	Boys Secondary School and the client had were in negotiation to come up with a mutual agreement. In additional relevant permit from road authorities will be obtained before commencement of works along the reserves and there were no private properties, trees or crops that would be interfered with hence no one would require compensation **Comment – Reinstatement** The residents wanted to know if reinstatement of pipes that will be damaged during excavation will be considered **Response** The consultant informed the meeting that all reinstatements will be adequately handled by the contractor.	Consultant Resident Consultant
Mtg.1-08	**A.O.B** The Chief requested for cooperation from the community for smooth running of the project.	**Chief**
Mtg. 1-09	**Adjournment** The meeting was closed with a word of prayer from a resident at 1300HRS.	**All**

MINUTES SIGNED AND AGREED UPON BY:

For and on behalf of Client (CWWDA)

SIGN..... DATE 4-06-2021

For and on behalf of Local Administration (Assistant Chief)

SIGN..... DATE 04/06/2021

ASST. CHIEF
LANGOBAYA SUB-LOCATION
LANGOBAYA LOCATION
DATE 04/06/2021

For and on behalf of Consultant (SARI GATH SGAPI)

SIGN..... DATE 4/6/2021

BY Lydiah Mbaga DATE 4/6/2021

CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF PRELIMINARY DESIGNS, DETAILED DESIGNS, SAFEGUARDS DOCUMENTS AND TENDER DOCUMENTS AND CONSTRUCTION SUPERVISION OF SECOND BARICHO – KAKUYUNI WATER PIPELINE AND TRANSMISSION PIPELINES TO KILIFI AND GANDA TANKS

MINUTES FOR PUBLIC CONSULTATION MEETINGS AND KEY STAKEHOLDERS INTERVIEWS HELD ON 7TH MAY 2021 AT KAKUYUNI

NATURE OF MEETING:	**PUBLIC CONSULTATION**
PARTIES IN ATTENDANCE:	**CONSULTANT & COMMUNITY**
DATE:	**MAY 7TH , 2021**
VENUE:	**KAKUYUNI**

MINUTES FOR PUBLIC CONSULTATION MEETINGS AND KEY STAKEHOLDERS INTERVIEWS HELD ON 7TH MAY 2021 AT KAKUYUNI

MEMBERS PRESENT- LIST OF ATTENDANCE IS ATTACHED

No.	Name	Organisation	Designation
1.	Boniface Kogi	SGAPI SARI GATH	A.E
2	Lydia Mbogo	SGAPI SARI GATH	E.O
3	Joseph Mulusya	SGAPI SARI GATH.	Surveyor
4	Alphonce Kitsao Jefwa	Administration	Assistant chief
5	Farida Garama		Assistant Chief
6	Bendera Thoya		Village Elder
7	Naphtal Birya	Interior	
8	Samsom Kamunga		MCA
9	Nixon Mramba		
10	Samuel Jefwa		
11	Kithi Robert		
12	Benjamin Karisa		Resident
13	Masoud Ali		Resident
14	Athman Fadhili		Resident
15	Athmani Mangi		Resident
16	Ruth Yongo		Resident
17	Cosmas Mramba		Resident
18	Shalet Karisa		Resident
19	Vincent Karisa		Resident
20	Paul Mtawali		Resident
21	Francis Kitsao		Resident
22	Flevian Mwaria		Resident

ABBREVIATIONS

AE	Assitant Engineer
EO	Environmental officer
AOB	Any Other Business
Consultant	SARI GATH SGAPI

AGENDA

1. Introduction
2. Reason for stakeholder Consultation
3. Current Water Sources and Challenges
4. Interventions to address the Challenges
5. Potential project Impacts (Positive and Negative)
6. Comments and Responses
7. A.O.B
8. Adjournment

MINUTE NO:	DESCRIPTION	ACTION BY
Mtg.1-01	**INTRODUCTION** The Chief called the meeting to order at 1015hrs. The meeting began with a word of prayer that was led by one of the residents. This was followed by brief self-introduction by all residents. The chief then invited the consultants (Assistant Engineer, Environmental Officer and Surveyor) who introduced themselves then stated the agenda of the meeting that was adopted.	**All**
Mtg.1-02	**REASON FOR STAKEHOLDER CONSULTATION** The Assistant Engineer gave a brief introduction of the Project scope. Then later welcomed the Environmental officer who cited the reason for the stakeholder consultation, as a legal requirement that to create awareness of the proposed intervention to all relevant stakeholders that should be an opportunity for them to air their views and concerns.	**Consultant**
Mtg.1-03	**CURRENT WATER SOURCES AND CHALLENGES** The stakeholders commented on the fact that water has been a major challenge due to its frequent shortages, high prices and occasional broken pipes despite the fact that they lived near the water source.	**Consultant**
Mtg.1-04	**INTERVENTIONS TO ADDRESS THE CHALLENGE** The Assistant Engineer mentioned the project implementation timelines and stated that the project would tentatively begin around October 2021 and take about a year to complete. He further stated that the pipes of DN 700 for 29 km and DN 600 for 12.5 km, there would also be a 5,000m^3 tank at Kakyuni Boys High School	**Consultant**
Mtg.1-05	**POTENTIAL PROJECT IMPACTS (POSITIVE and NEGATIVE)** **Positive project impact**	**Consultant**

	• Accessibility to clean and reliable water, hygiene and sanitation, reduced water and Improved sanitation burden to women, Increased land values in the project area. **Negative project impact** • Impacts on biophysical environment (Vegetation destruction, soils, water resources pollution or over abstraction) • Social Environment (labor influx, child labor, gender inclusivity, human rights, teenage pregnancies, school dropouts, HIV and AIDS, Health and Safety Impacts (Noise and vibrations, air pollution, accidents on site, fire disasters, public health)	
Mtg.1-07	**Filling in the questionnaire** The community members were taken through the questionnaire as they fill ESIA expert. **<u>COMMENTS AND RESPONSES</u>** **Comment – Cost of the proposed project** The residents requested to know the total project cost and how much was set aside for the CSR **Response** The consultant informed the meeting that the project cost is approximately Ksh 2 billion, the resident were advised that during implementation and based on the budget some CSR proposals may be considered **Comment – Functionality of the new proposed pipeline** The community wanted to know if they will be allowed to get water from the new pipeline once its complete. **Response** The community will use the existing pipeline and additional water kiosks will be considered, however the new proposed rising main will only be used to supply water to Kakuyuni tanks.	Resident Consultant Resident

	Comment – Job Requirements The residents wanted to know if they will have to produce NHIF, NSSF and Certificate of Good conduct before they can be recruited. **Response** They were informed that those requirements are not only mandatory but also a basic requirement of the law of Kenya, however, for casual labourers an Identification Card is mandatory. **Comment – Sound Pollution** The residents wanted to know how sound pollution from the heavy machinery will be mitigated since one of the construction sites is near a school compound (Proposed Kakuyuni Tank). **Response** Minimal use of machinery will be used and when avoidable, use of machinery will be done with controlled noise production **Comment – Compensation** The community wanted to know if there will be any form of compensation **Response** For the pipeline route, it was noted that it will use the existing road reserve. The new proposed tank will be constructed at Kakuyuni Boys Secondary School and the client had were in negotiation to come up with a mutual agreement. In additional relevant permit from road authorities will be obtained before commencement of works along the reserves and there were no private properties, trees or crops that would be interfered with hence no one would require compensations **Comment – Non-Operational Kiosks** The residents wanted to know if they were any plans set aside for the non-functional kiosks. **Response** The non-operational kiosks will be rehabilitated; MAWASCO and KIMAWASCO will revive the existing kiosks once the 2nd pipeline is laid.	Consultant Resident Consultant Resident Consultant Resident Consultant
Mtg.1-08	**A.O.B**	

	The Chief requested for cooperation from the community for smooth running of the project.	**Chief**
Mtg. 1-09	**Adjournment** The meeting was closed with a word of prayer from a resident at 1130HRS	**All**

MINUTES SIGNED AND AGREED UPON BY:

For and on behalf of Client (CWWDA)

SIGN..... DATE 4-06-2021

For and on behalf of Local Administration (Assistant Chief)

SIGN..... DATE 4TH JUNE 2021.

For and on behalf of Consultant (SARI GATH SGAPI)

SIGN..... DATE 4/6/2021

BY Lydiah Mbogo DATE 4/6/2021

CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF PRELIMINARY DESIGNS, DETAILED DESIGNS, SAFEGUARDS DOCUMENTS AND TENDER DOCUMENTS AND CONSTRUCTION SUPERVISION OF SECOND BARICHO – KAKUYUNI WATER PIPELINE AND TRANSMISSION PIPELINES TO KILIFI AND GANDA TANKS

MINUTES FOR PUBLIC CONSULTATION MEETINGS AND KEY STAKEHOLDERS INTERVIEWS HELD ON 6TH MAY 2021 AT JILORE

NATURE OF MEETING:	**PUBLIC CONSULTATION**
PARTIES IN ATTENDANCE:	**CONSULTANT & COMMUNITY**
DATE:	**MAY 6TH , 2021**
VENUE:	**JILORE**

MINUTES FOR PUBLIC CONSULTATION MEETINGS AND KEY STAKEHOLDERS INTERVIEWS HELD ON 7TH MAY 2021 AT JILORE

MEMBERS PRESENT- LIST OF ATTENDANCE IS ATTACHED

No.	Name	Organisation	Designation
1.	Boniface Kogi	SGAPI SARI GATH	A.E
2	Lydia Mbogo	SGAPI SARI GATH	E.O
3	Joseph Mulusya	SGAPI SARI GATH.	Surveyor
4	Mercy Makadu	SGAPI SARI GATH	Sociologist
5	Charles Mulewa		Chief
6	Nelly Kadzeha		Assistant Chief
7	Mwamure Masha		Resident
8	Hinzano Kadzeha		Resident
9	Ulice Mthengo		Resident
10	Amos Kahindi		Resident
11	John Chea		Resident
12	Christine Mwathethe		Resident
13	Nickson Mitsanze		Resident
14	Austin Mwamure		Resident
15	Alfred Kahindi		Resident
16	Elias Thoya		Resident
17	Peter Charo		Resident
18	Lucy Jumwa		Resident
19	Annet Katunda		Resident
20	Monica Maita		Resident
21	Lillian Sidi		Resident
22	Adija Munala		Resident
23	Pauline Kadzomba		Resident

ABBREVIATIONS

AE	Assistant Engineer
EO	Environmental officer
AOB	Any Other Business
Consultant	SARI GATH SGAPI

AGENDA

1. Introduction
2. Reason for stakeholder Consultation
3. Current Water Sources and Challenges
4. Interventions to address the Challenges
5. Potential project Impacts (Positive and Negative)
6. Comments and Responses
7. A.O.B
8. Adjournment

MINUTE NO:	DESCRIPTION	ACTION BY
Mtg.1-01	**INTRODUCTION** The Chief called the meeting to order at 1400hrs. The meeting began with a word of prayer that was led by one of the residents. This was followed by brief self-introduction by all residents. The chief then invited the consultants (Assistant Engineer, Environmental Officer and Surveyor) who introduced themselves then stated the agenda of the meeting that was adopted.	**All**
Mtg.1-02	**REASON FOR STAKEHOLDER CONSULTATION** The Assistant Engineer gave a brief introduction of the Project scope. Then later welcomed the Environmental officer who cited the reason for the stakeholder consultation, as a legal requirement that to create awareness of the proposed intervention to all relevant stakeholders that should be an opportunity for them to air their views and concerns.	**Consultant**
Mtg.1-03	**CURRENT WATER SOURCES AND CHALLENGES** The stakeholders commented on the fact that water has been a major challenge due to its frequent shortages, high prices and occasional broken pipes despite the fact that they lived near the water source.	**Consultant**
Mtg.1-04	**INTERVENTIONS TO ADDRESS THE CHALLENGE** The Assistant Engineer mentioned the project implementation timelines and stated that the project would tentatively begin around October 2021 and take about a year to complete. He further stated that the pipes of DN 700 for 29 km and DN 600 for 12.5 km, there would also be a 5,000,000cm3 tank.	**Consultant**
Mtg.1-05	**POTENTIAL PROJECT IMPACTS (POSITIVE and NEGATIVE)** **Positive project impact** • Accessibility to clean and reliable water, hygiene and sanitation, reduced water and Improved sanitation burden to women, Increased land values in the project area.	**Consultant**

	Negative project impact • Impacts on biophysical environment(Vegetation destruction, soils, water resources pollution or over abstraction) • Social Environment (labor influx, child labor, gender inclusivity, human rights, teenage pregnancies, school dropouts, HIV and AIDS, resettlement issues.Health and Safety Impacts(Noise and vibrations, air pollution, accidents on site, fire disasters, public health)	
Mtg.1-07	**Filling in the questionnaire** The community members were taken through the questionnaire as they fill ESIA expert. **<u>COMMENTS AND RESPONSES</u>** **Comment – Compensation** The residents requested to know if they will receive compensation if disturbed or displaced during project construction. **Response** For the pipeline route, it was noted that it will use the existing road reserve. The new proposed tank will be constructed at Kakuyuni Boys Secondary School and the client had were in negotiation to come up with a mutual agreement. In additional relevant permit from road authorities will be obtained before commencement of works along the reserves and there were no private properties, trees or crops that would be interfered with hence no one would require compensation **Comment – Pipeline route** The community wanted to know the pipeline route. **Response** They were informed that the pipeline will follow the old pipeline way leave to the proposed reservoir at Kakuyuni **Comment – CSR** The community requested to know if the project will consider any CSR	Resident Consultant Resident Consultant Resident Consultant

	Response The consultant informed the meeting that the project cost is approximately Ksh 2 billion, the resident were advised that during implementation and based on the budget some CSR proposals may be considered	
Mtg.1-08	**A.O.B** The Chief requested for cooperation from the community for smooth running of the project.	**Chief**
Mtg. 1-09	**Adjournment** The meeting was closed with a word of prayer from a resident at 1630HRS.	**All**

MINUTES SIGNED AND AGREED UPON BY:

For and on behalf of Client (CWWDA)

SIGN..... DATE 4-06-2021

For and on behalf of Local Administration (Chief)

SIGN..... DATE 4.6.2021

CHIEF
JILORE LOCATION
P. O. BOX 1, MALINDI

For and on behalf of Consultant (SARI GATH SGAPI)

SIGN..... DATE 4/6/2021

BY Lydiah Mbago DATE 4/6/2021

Attendance Sheets

KEY INFORMANTS.

THE WORLD BANK IBRD • IDA | WORLD BANK GROUP

SARI CONSULTING LTD

SGAPI

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WATER AND SANITATION DEVELOPMENT PROJECT (WSDP)

CONSULTANCY SERVICES FOR PREPARATION OF PRELIMINARY DESIGNS, FEASIBILITY STUDY, DETAILED DESIGNS, SAFEGUARDS DOCUMENTS AND TENDER DOCUMENTS AND CONSTRUCTION SUPERVISION OF SECOND BARICHO – KAKUYUNI WATER PIPELINE AND TRANSMISSION PIPELINES TO KILIFI AND GANDA TANKS

LIST OF ATTENDANCE – Public Consultation Meetings and Key Stakeholders Interviews DATE: ~~April ,2021~~ May 05 -08 2021

No.	Name	Organization/Designation	Email	Phone No	Signature
1.	ISAAC C[illegible]	MAWASCO / TM	icwisaac@gmail.com	0723161671	
2.	Lydiah Mbogo	SARI / GATH - Consultant	lydiwanji[illegible]@gmail.com	0725179521	
3.	Boniface Kanau Kogi	SARI/Gath - Consultant Assistant Egnee	Kogi.ban@gmail.c	0725[illegible]17	
4.	Joseph Mulusya	SARI / GATH - Consultant Surveyor	mulusysi@gmail.com	0797016975	
5.	Meray Makadu	SARI / GATH - Consultant	meraymakadu@gmail	0700157376	
6.	COSMAS KAI	MAWASCO / TECH OFFICER	Coskaisso@gmail.com	0714442277	
7.	Jacinta M. Makau	CGK / Planner	jantmbk@yahoo.com	0721673041	
8.	EMMANUEL KAZUNGU MAITHA	County G. of Kilifi ADMIN.	Cgkmaitha509@gmail.com	0726038941	
9.	JULIUS Fondo	MUNICIPALITY OF MALINDI – ADMINISTRATOR	jeyfondo123@gmail.com	0729855841	

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No.	Name	Organization/Designation	Email	Phone No	Signature
10.	Linet Zabibu	Ag Env officer Malindi SC	linetzabibu[illegible]@gmail	0791705[illegible]	
11.	John Kipsire	INTERIOR	dccmalindi2016@gmail.com	0722178635	
12.	HELLY UMAZI MATSENA	ASSISTANT CHIEF	[illegible]	0720301[illegible]	
13.	Hezekiah Mwarua	MD-KIMAWASCO	hmwarua@kilifiwater.co.ke	0721379956	
14.	Eng. G. Kigi Kenya	CDWES	[illegible]49@gmail.com	0715895[illegible]	
15.	Kutswa Olaka	CC - Kilifi	[illegible]@[illegible].com	0727628434	
16.	Josphat Mateya	DCC Kilifi North	[illegible]	072[illegible]	
17.	Eric Mathia	DOH - Kilifi	[illegible]	0720202-462	
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LIST OF ATTENDANCE – Public Consultation Meetings and Key Stakeholders Interviews DATE: ~~April~~ May, 2021

No.	Name	Organization/Designation	Email	Phone No	Signature
1.	NAPHTAL BIRYA	INTERIOR SOIP.		0790571064	
2.	Pst. SAMSON A. WAMUNGA	BOM MEMBER-KAKUYUNI BOYS SEC.	samsonwamunga10@gmail.com	0720248614 0737039118	
3.	NIXON MRAMBA	MCA	–	0722820348	
4.	SAMUEL JETWA YAA	BOM MEMBER – KAKUYUNI BOYS SEC	Samuel.Jetwa2017@gmail.com	0723400180	
5.	KITHI ROBERT JOHNSON	DEPUTY PRINCIPAL KBSS	Kithirobert@gmail.com	0716647516	
6.	Eng. T. K. KEMBAGOR	REGIONAL DIRECTOR-KERRA	timzz2000@yahoo.co.uk	0722946287	
7.	Eng. Nicholas KEBARO	Director RTPW	Kerongodirectorroads@gmail.	0723445006	
8.					
9.					

JILORE LOCATION

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WATER AND SANITATION DEVELOPMENT PROJECT (WSDP)

CONSULTANCY SERVICES FOR PREPARATION OF PRELIMINARY DESIGNS, FEASIBILITY STUDY, DETAILED DESIGNS, SAFEGUARDS DOCUMENTS AND TENDER DOCUMENTS AND CONSTRUCTION SUPERVISION OF SECOND BARICHO – KAKUYUNI WATER PIPELINE AND TRANSMISSION PIPELINES TO KILIFI AND GANDA TANKS

LIST OF ATTENDANCE – Public Consultation Meetings and Key Stakeholders Interviews **DATE:** April , 2021

No.	Name	Organization/Designation	Email	Phone No	Signature
1.	CHARLES M. MULEWA	CHIEF	CMulewa62@gmail.c	0723532021	
2.	MELLY U. KATZCHA	ASST. CHIEF	Kadzelu.u.mzungu@...	0720311180	
3.	MWAMURE MASHA	BALOZI KAKONEHI		0705347212	
4.	HINZANO P. KADZEHA	HEAD TEACHER-JILORE	hinzanoPonda2@gmail.com	0728994666	
5.	ULICE MTHENGO	W/ PWD		0713226014	
6.	AMOS KAHINDI MUKARE	V/ELDER		0714663219	
7.	JOHN N. CHOKA	PWD	johnchoka59@yahoo	0714227039	
8.	CHRISTINE P. MWAITHEITHE	V/ELDER		0717615795	
9.	NICKSON K. MITSANZE	RELIGIOUS LEADER	mitsanzee@yahoo.com	0725639864	

No.	Name	Organization/Designation	Email	Phone No	Signature
10.	AUSTINE MWAMURE YAA	YOUTH REPRESENTATIVE MPS OFFICE		0743623488	
11.	ALFRED KAHINDI	BALOZI		0721885784	
12.	ELIAS THOYA NDERO	BALOZI		0765677846	
13.	PETER CHARO MAITHA	BALOZI		0711784594	
14.	LUCY JUMWA KAINGU	VIELDER		0727513226	
15.	ANNET KATUNDA	VIELDER		0706089591	
16.	MONICA M MAITA	BALOZI		0725385951	
17.	LILIAN SIDI DZEKA	YOUTH REPRESENTATIVE		0114344923	
18.	ADISA KINGA KIGHALA	BALOZI		0708819610	
19.	PAULINE G KADZOMBA	BALOZI		0720837827	
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KAKUYUNI

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CONSULTANCY SERVICES FOR PREPARATION OF PRELIMINARY DESIGNS, FEASIBILITY STUDY, DETAILED DESIGNS, SAFEGUARDS DOCUMENTS AND TENDER DOCUMENTS AND CONSTRUCTION SUPERVISION OF SECOND BARICHO – KAKUYUNI WATER PIPELINE AND TRANSMISSION PIPELINES TO KILIFI AND GANDA TANKS

LIST OF ATTENDANCE – Public Consultation Meetings and Key Stakeholders Interviews **DATE:** April , 2021

No.	Name	Organization/Designation	Email	Phone No	Signature
1.	ALPHONCE MUISMO JEFWA	INTERIOR/ ASST CHIEF		0723723682	
2.	FAZIDA GARAMA MAZERU	INTERIOR/ ASST. CHIEF		0703418518	
3.	BONDERA CHENGO THOYA	VILLAGE ELDER		0715751113	
4.	NELLY .K. MWENI	ELDER KKY.		0724597621	
5.	Priscilla Kabili Kabindi			0714002366	
6.	Anna Safari			0742708579	ANNA
7.	SIMEON HALA KAISA			0716081553	
8.	PAUL KABISA CHARO	VILAGE		0724641437	
9.	BENJAMIN KARISA AMANI	VILLAGE ELDER		0721101346	

KAKUYUNI

No.	Name	Organization/Designation	Email	Phone No	Signature
24.	MASOUD ALI SAID	Ustadh-Al FAH M.Sc	masoudali024@gmail.com	0720341107	
25.	ATHMAN FAOHILI	KAKUYUNI - RESIDENT	athmanfe@gmail.com	0723883400	
26.	ATHMANI MANGI	MZEE NYUMBA KUMI		0726364675	
27.	Ruth yongo	KAKUYUNI- RESIDENTI	ruthmwende94@gmail.com	0725058915	
28.	COSMAS MRAMBA	MONGOTINI-		0716192715	
29.	SHALET C.KARISA	MONGOTINI		0790503943	
30.	VINCENT F. KARISA	MONGOTINI		0708459452	
31.	PAUL MTAWALI HARE	MONGOTINI		0728116466	
32.	FRANCIS KITSAO NZARO	KAKUYUNI RESID	francis kitsao nzaro @gmail.com	0705144258	
33.	FLEVIAN MWARIA KAIAMA	KAKUYUNI BAWO	mflevian@gmail.	0726997285	
34.					
35.					
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GANDA - LOCATION

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WATER AND SANITATION DEVELOPMENT PROJECT (WSDP)

CONSULTANCY SERVICES FOR PREPARATION OF PRELIMINARY DESIGNS, FEASIBILITY STUDY, DETAILED DESIGNS, SAFEGUARDS DOCUMENTS AND TENDER DOCUMENTS AND CONSTRUCTION SUPERVISION OF SECOND BARICHO – KAKUYUNI WATER PIPELINE AND TRANSMISSION PIPELINES TO KILIFI AND GANDA TANKS

LIST OF ATTENDANCE – GANDA **Public Consultation Meetings and Key Stakeholders Interviews** **DATE:** May/April **, 2021**

No.	Name	Organization/Designation	Email	Phone No	Signature
1.	BARTHOLOMEW N. KITUNGA	INTERIOR SENIOR CHIEF	ngumbau kitunga @gmail.com	0727954539	
2.	Omar Hassan Wario	INTERIOR ASST. CHIEF - GANDA	omarjoe@gmail.com	0727 843 530	
3.	Juma Mafuta Omar	ASST - CHIEF - MERE	jumaomaru@gmail.com	0725858266	
4.	Anne Nema Ziro	ASST. CHIEF - MCABATA	anne.nema74@gmail.com	0721 4200 66	
5.	Mohamed Suleiman Kasim			0727912556	
6.	George Chonga Kahindi			0712156357	
7.	Rashid Kalu Kithi			0711839446	
8.	Mwinyi Hadi Abdulrahman			0725691272	
9.	Salim Omar Awadh			0713290	

No.	Name	Organization/Designation	Email	Phone No	Signature
10.	[illegible]	MERE		0773506296 ~~0714747473~~	
11.	[illegible]	MERE RESIDENT		0718374015	
12.	[illegible]	MERE		0714013709	
13.	[illegible]	CANAL	algamalagency@g	0720277182	
14.	[illegible]	MERE		0710244194	
15.	[illegible]	MERE		0795493846	
16.	[illegible]	MERE		0719554199	
17.	[illegible]	MERE		0729249167	
18.	[illegible]	MERE		0798777297	
19.	[illegible]	CANAL		0743619763	OMARI
20.	[illegible]	CANAL		0712156357	
21.	RASHIDI KALU.	CANAL		0711839446	RASHIDI
22.	[illegible]	MERE		0795725504	
23.	Salim Omari ~~Amadhi~~	CANAL		0713200591	

GANDA SUB LOCATION

No.	Name	Organization/Designation	Email	Phone No	Signature
24.	SAID OMAR SAID	GANDA		0720297182	
25.	KARARU NGIRA	MERE		0705146922	
26.	JOSPHAT TEMO CHIKOLA	MERE		0710244194	
27.	RICHARD KARISA MITSANZE	NERE		0714013704	
28.	Abdulrehman Njema	MERE		0727566706	
29.	Kahindi Lawrence Kombe	Kathimbiji		0711616013	
30.	UASSOR HAMOUD	MERE		0721204138	
31.					
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Annex 4:Sample Chance Find Procedure

Chance find procedures are an integral part of the project ESMMP and civil works contracts. The following is proposed in this regard:

- If the Contractor discovers archaeological sites, historical sites, remains and objects during excavation or construction, the Contractor shall:
- Stop the construction activities in the area of the chance find;
- Delineate the discovered site or area;
- Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be arranged until the responsible local authorities or the Ministry of State for National Heritage and Culture take over;
- Notify the supervisor, Project Environmental Officer and Resident Engineer who in turn will notify the responsible local authorities and the Ministry of State for National Heritage and Culture immediately (within 24 hours or less).
- Responsible local authorities and the Ministry of State for National Heritage and Culture would then be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures. This would require a preliminary evaluation of the findings to be performed by the archaeologists of the National Museums of Kenya. The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage, namely the aesthetic, historic, scientific or research, social and economic values.
- Decisions on how to handle the find shall be taken by the responsible authorities and the Ministry of State for National Heritage and Culture. This could include changes in the layout (such as when finding irremovable remains of cultural or archaeological importance) conservation, preservation, restoration and salvage.
- Implementation for the authority decision concerning the management of the finding shall be communicated in writing by relevant local authorities.
- Construction work may resume only after permission is given from the responsible local authorities or the Ministry of State for National Heritage and Culture concerning safeguard of the heritage.

Annex 5: Signed Consent and Memorandum of Understanding (MoU)

CONSENT FORM

Kakuyuni Boys Secondary School is a Public day and boarding school located in Goshi location, Malindi Sub-County, Kilifi County at Land Parcel No. [illegible] The school understands that Coast Water Works Development Agency (CWWDA) with funding from the World Bank and the Government of Kenya under the Water and Sanitation Development Project (WSDP) is undertaking the Second Baricho – Kakuyuni Water Pipeline Project.

The School understands the project components, which include the construction of a 5,000m^3 reinforced concrete tank. The School supports the proposed project and is willing to provide the required piece of land of size 1.4acres for the construction of this tank. As part of CSR, CWWDA will construct a fully furnished modern library.

An agreement is hereby drawn between Coast Water Works Development Agency and Kakuyuni Boys Secondary School with the following conditions of mutual benefit;

a) Kakuyuni Boys Secondary School will provide 1.4 acres of land to CWWDA for construction of a 5,000m^3 reinforced concrete reservoir;
b) CWWDA will construct a fully furnished modern library for the school;
c) CWWDA will uphold the requisite environmental and social mitigation measures to safeguard the school against any negative impacts and
d) This agreement will be binding to the two parties.

FOR:
KAKUYUNI BOYS HIGH SCHOOL

Alphonce Kaingu
Principal & Secretary to the BOM

Signature _____

Date 14-03-2022

In the presence of:
Name SAMUEL JEFWA YAA

Signature _____

Date 14-03-2022

FOR:
COAST WATER WORKS DEVELOPMENT AGENCY

Martin Tsuma
Ag. Chief Executive Officer

Signature _____

Date 14. 3. 2022

In the presence of:
Name _____

JUDITH M. LELI
ADVOCATE
P.O. BOX 88 80100
MOMBASA KENYA

Signature _____

Date 14/3/2022

MEMORANDUM OF UNDERSTANDING

BETWEEN

COAST WATER WORKS DEVELOPMENT AGENCY

AND

KAKUYUNI BOYS SECONDARY SCHOOL

ON

IMPLEMENTING THE SECOND BARICHO – KAKUYUNI WATER PIPELINE PROJECT IN KILIFI COUNTY

UNDER
WATER AND SANITATION DEVELOPMENT PROJECT (WSDP)

PREAMBLE

This Memorandum of Understanding (MOU) sets the terms and conditions for cooperation in the part implementation of Second Barichò – Kakuyuni Water Pipeline Project in Malindi Sub-County, Kilifi County, under the Water and Sanitation Development Project (WSDP) funded by the GoK and World Bank.

BETWEEN:

COAST WATER WORKS DEVELOPMENT AGENCY of P.O. BOX 90417-80100, MOMBASA

And

KAKUYUNI BOYS SECONDARY SCHOOL of P.O. Box, 5400, Malindi.

The parties mentioned being parties to this MOU and having a mutual interest in the successful completion of Second Baricho – Kakuyuni Water Pipeline Project in Malindi Sub-County, Kilifi County under the WSDP:

Article I: Background and Purpose

WHEREAS Part of the Project includes the construction of 5,000m^3 reinforced concrete reservoir within which will lead to utilization of size 1.4acres of the school land for the construction of the reservoir.

WHEREAS

The School understands the project components, which include the construction of a 5,000m^3 reinforced concrete reservoir. The School supports the proposed project and is willing to provide the required piece of land of size 1.4acres for the construction of this reservoir. As part of CSR, CWWDA will construct a fully furnished modern library.

WHEREAS Coast Water Works Development Agency (CWWDA) is one of the nine (9) Water Works Development Agencies (WWDA) established under the Ministry of Water, Sanitation & Irrigation under the Water Act 2016 vide Legal Notice No. 28 of 26th April 2019 which was appointed as the Project Implementing Agency for the purposes of the Project.

Article II: Objectives

The general objective of this MOU is to ensure timely implementation of the construction of 5,000m^3 reinforced concrete reservoir and as part of CSR, the construction of fully furnished modern library for the Kakuyuni Boys Secondary School under the Second Baricho-Kakuyuni Pipeline Project. The CSR is budgeted to a tune of Kenya Shillings Ten Million.

Article III: Institutional Responsibilities for Activities

1. Coast Water Works Development Agency shall be responsible for the implementation of fully furnished modern library on behalf of the financier and the Ministry of Water, Sanitation and Irrigation
2. The Ministry of Water, Sanitation and Irrigation shall follow up to ensure the construction of the fully furnished modern library is implemented.
3. Coast Water Works Development Agency shall uphold the requisite environmental and social mitigation measures to safeguard the school against any negative impacts.
4. Kakuyuni Boys High School;
    a) shall provide 1.4 acres of land for the construction of 5,000m^3 reinforced concrete reservoir within the school compound.
    b) shall allocate land for construction of the fully furnished modern library within the school compound.

Article IV: Intellectual property rights

Any other material produced in collaboration of this MOU shall have ownership in intellectual property rights of both parties in accordance with the relevant laws of Kenya.

Article V: Confidentiality

1. Subject to the freedom of information under the Constitution due to public bodies; the existence, extent and content of discussions between the parties relating to this MOU is confidential. Each party shall undertake to preserve the confidentiality of information, documents and data received from the other party during the implementation of this MOU that may jeopardize the successful implementation of the Project.
2. A party shall not disclose any confidential information to any person without the prior written consent of the other party.

Article VI: Modification and amendment

This MOU may be modified or amended as may be required from time to time by mutual written consent of all parties. Such modifications or amendments shall be signed and dated by all parties and shall come into force on such a date as shall be mutually agreed upon by the parties and shall form part of this MOU.

Article VII: Liability

The parties in this MOU shall not be liable for the acts or defaults of the other party. All liabilities arising from or in connection with the activities carried out by one party shall be the responsibility of the one party, and no liability of any nature shall be passed to the other party and vice versa.

Article VIII: Applicable law and Mediation

This MOU and its performance shall be governed by and construed in all respects in accordance with Kenyan law, and any dispute shall be settled by use of consultation, good offices and mediation between the parties. A single mediator shall be jointly appointed by the parties to settle the differences between the parties and the mediation seat shall be Malindi.

Article IX: Termination

Without affecting any other right or remedy available to it, either party may terminate this MOU, in whole or in part, at any time before the Expiry Date (defined below), by giving a three (3) months' notice in writing to the other party.

Article X: Commencement and duration

This MOU shall come into force on the date of signing and shall remain in effect until the ..... **(The Expiry Date),** unless earlier terminated pursuant to Article XI.

Article XI: Miscellaneous

1. Notices

All notices given or made under this MOU shall be in writing in the English language and shall be deemed to have been duly given or made when delivered by courier to the party in question to the address as stipulated in this MOU. Furthermore, a written notice or communication actually received by one party from another party shall be adequate written notice or communication to such party, provided that any provision that requires any notice or variation to be in writing shall be complied with only if such notice is in a written paper based form.

2. Transfer of assignment

This MOU and any rights and obligations hereunder may not be transferred, assigned or delegated by any party to a third party without the prior written consent of the other party.

3. Invalidity

If any term or provision in this MOU shall in whole or in part be held to any extent to be illegal or unenforceable under any enactment or rule of law, that term or provision or part shall to that extent be deemed not to form part of this MOU and the enforceability of the remainder of this MOU shall not be affected thereby.

4. Counterparts

This MOU shall be executed in two counterparts (but shall not be effective until each party has executed at least one (1) counterpart), each of which, when executed and delivered, shall be an original and which together shall have the same effect as if each party had executed and delivered the same document.

5. Entire Agreement

This MOU constitutes the entire agreement between the Parties and supersedes and extinguishes all previous agreements, memorandum of understandings, promises, assurances, warranties, representations and understandings between them, whether written or oral, relating to its subject matter.

IN WITNESS this MOU has been duly executed by the parties as of the day and year indicated below.

FOR:
COAST WATER WORKS DEVELOPMENT AGENCY

Martin Tsuma
Ag. Chief Executive Officer

Signature _____

Date 14. 3. 2022

In the presence of:

Name _____

Signature _____

Date _____

JUDITH .M. LELI
ADVOCATE
P.O. BOX 43126-80100
MOMBASA - KENYA

14/03/2022

FOR:
KAKUYUNI BOYS HIGH SCHOOL

Alphonce Kaingu
Principal & Secretary to the BOM

Signature _____

Date 14-03-2022.

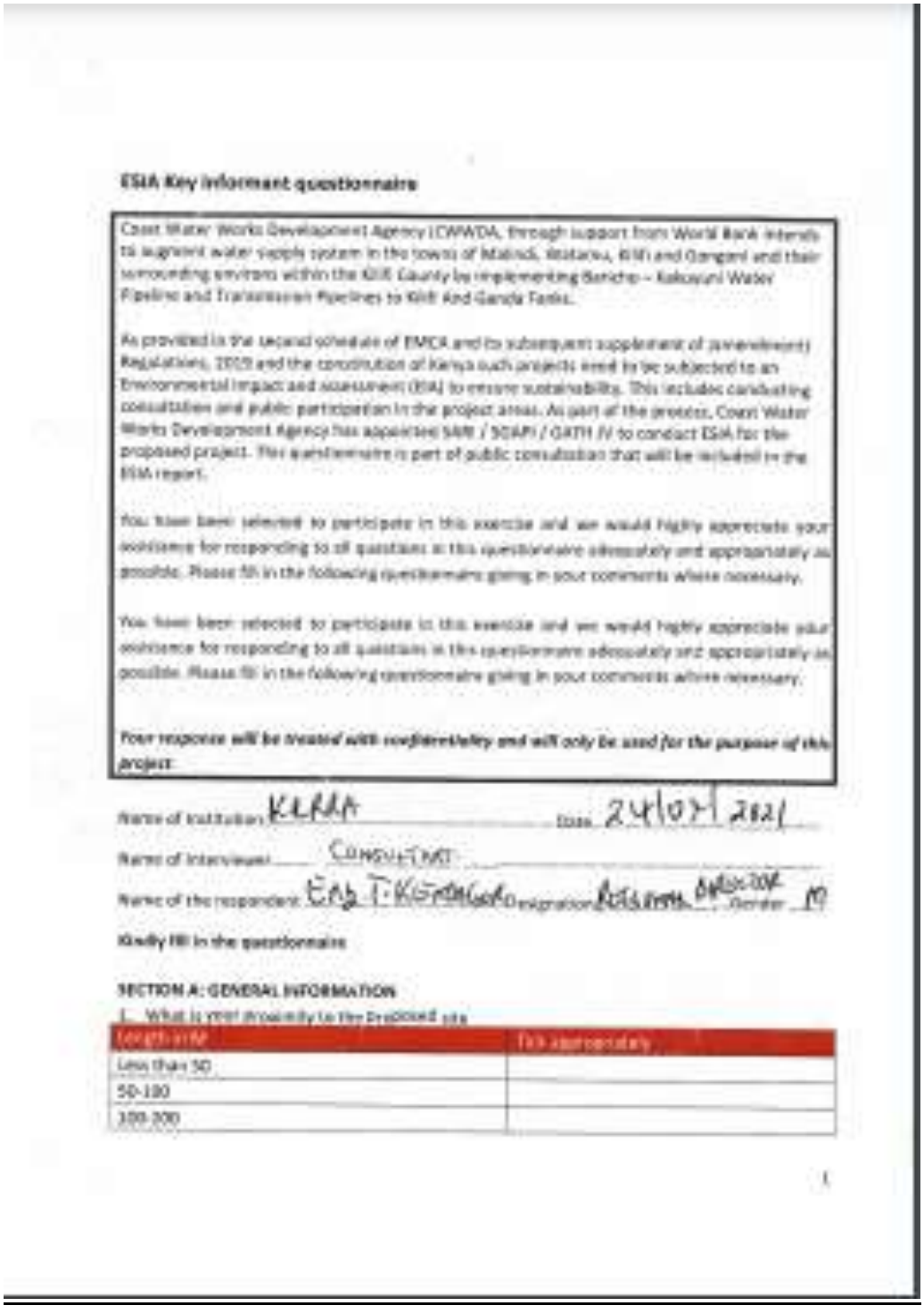
In the presence of:

Name SAMUEL JEFWA YAA

Signature _____

Date 14-03-2022

Annex 6: Questionnaires



ESIA Key informant questionnaire

Coast Water Works Development Agency (CWWDA), through support from World Bank intends to augment water supply system in the towns of Malindi, Watamu, Kilifi and Gongoni and their surrounding environs within the Kilifi County by implementing Baricho – Kakuyuni Water Pipeline and Transmission Pipelines to Kilifi And Ganda Tanks.

As provided in the second schedule of EMCA and its subsequent supplement of (amendment) Regulations, 2019 and the constitution of Kenya such projects need to be subjected to an Environmental Impact and assessment (EIA) to ensure sustainability. This includes conducting consultation and public participation in the project areas. As part of the process, Coast Water Works Development Agency has appointed SARI / SGAPI / GATH JV to conduct ESIA for the proposed project. This questionnaire is part of public consultation that will be included in the ESIA report.

You have been selected to participate in this exercise and we would highly appreciate your assistance for responding to all questions in this questionnaire adequately and appropriately as possible. Please fill in the following questionnaire giving in your comments where necessary.

You have been selected to participate in this exercise and we would highly appreciate your assistance for responding to all questions in this questionnaire adequately and appropriately as possible. Please fill in the following questionnaire giving in your comments where necessary.

Your response will be treated with confidentiality and will only be used for the purpose of this project

Name of institution: KERRA Date: 24/07/2021

Name of interviewer: CONSULTANT

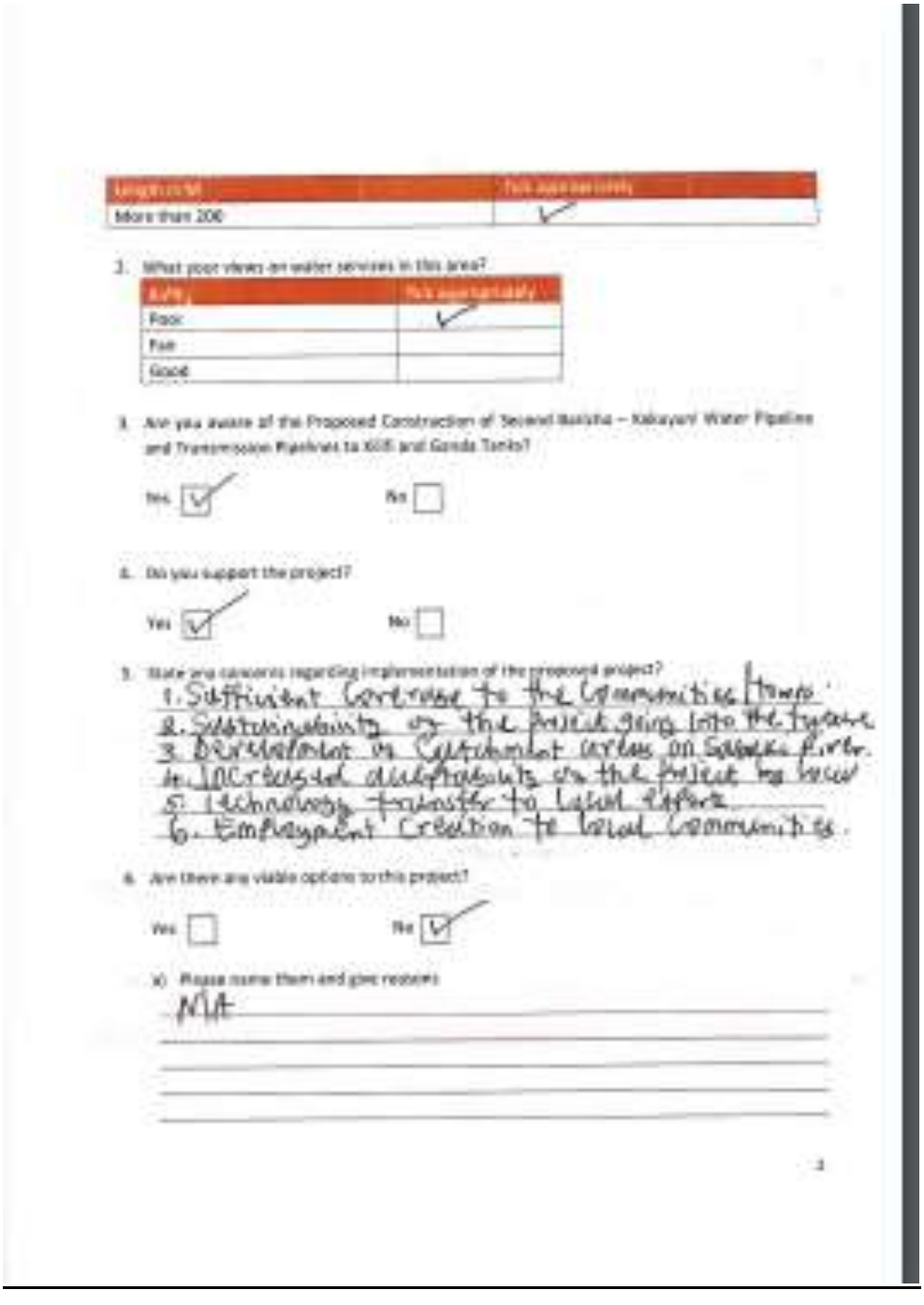
Name of the respondent: Eng. T. Kiptanui Designation: Assistant Director Gender: M

Kindly fill in the questionnaire

SECTION A: GENERAL INFORMATION

1. What is your proximity to the Proposed site

Length in M	Tick appropriately
Less than 50	
50-100	
100-200	



[illegible]	[illegible]
More than 200	✓

2. What your views on water services in this area?

[illegible]	[illegible]
Poor	✓
Fair	
Good	

3. Are you aware of the Proposed Construction of Second Baricho – Kakuyuni Water Pipeline and Transmission Pipelines to Kiili and Gonda Tanks?

Yes ☑ No ☐

4. Do you support the project?

Yes ☑ No ☐

5. State any concerns regarding implementation of the proposed project?

1. Sufficient Coverage to the Communities Homes.
2. Sustainability of the project going into the future.
3. Resettlement of Catchment areas on Sabaka River.
4. Increased disruptions of the Project by locals
5. Technology transfer to Local Efforts
6. Employment Creation to local Communities.

6. Are there any viable options to this project?

Yes ☐ No ☑

a) Please name them and give reasons

Nil

SECTION B: ANTICIPATED IMPACTS

7. What are the expected **POSITIVE** impacts of the project from construction phase through to commissioning and operations phases?

1. Increased availability of portable water.
2. Increased economic activities
3. Improved sanitation and health standards.
4. Employment creation to locals.

8. What are the expected **NEGATIVE** impacts of the project from construction phase through to commissioning and operations phases?

1. Prevalence of diseases such as HIV/Aids
2. Environmental destruction/soil erosion etc.
3. Displacement of population along pipeline route
4. Disruption of services such as roads/power/other services
5. Culture change

9. What suggestions would you make to mitigate any adverse environmental impacts during the project construction, commissioning and operations?

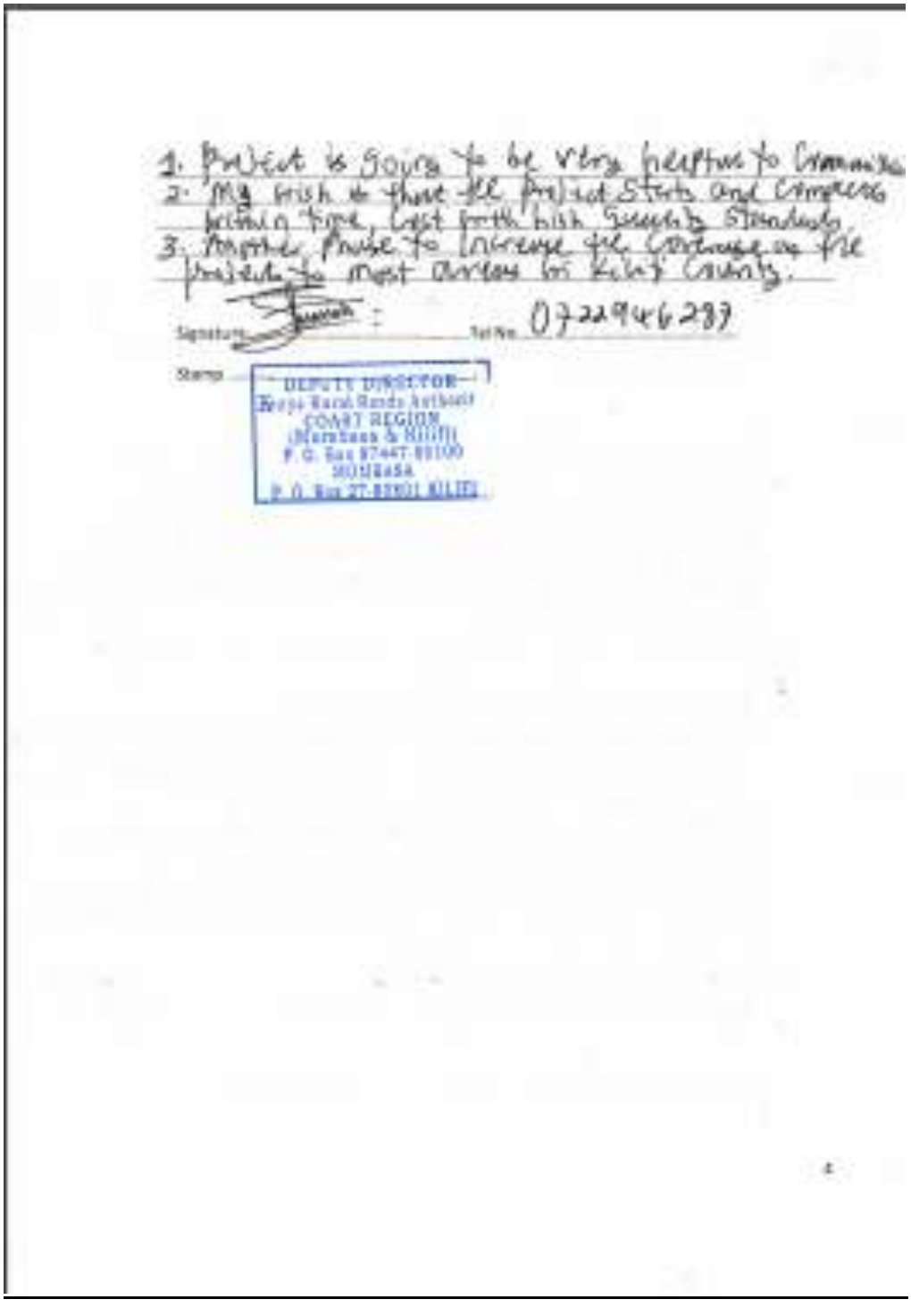
1. Conduct public participation.
2. Create awareness to locals & institutions affected
3. Undertake a baseline study and suggest ways on mitigating on the adverse effects.
4. Planting of trees to ~~migit~~ mitigate on adverse environmental effects.

10. Please state the current environmental and social challenges in the project area?

1. Lack of basic amenities such as schools/health services
2. Low education levels
3. Low health standards
4. Low conservation efforts on environment

11. Any relevant observations, recommendations or comments on this project

1



1. Project is going to be very helpful to Community
2. My wish is that the project starts and completes within time, cost with high quality Standards
3. Kindly, Raise to increase the Coverage of the project to most areas in Kilifi County.

Signature: ..... Tel No. 0722946287

Stamp:

DEPUTY DIRECTOR
Water Harvesting Authority
COAST REGION
(Mombasa & Kilifi)
P. O. Box 87447-80100
MOMBASA
P. O. Box 77-80201 KILIFI

Annex 7: Social Screening report

FEASIBILITY STUDY, PREPARATION OF PRELIMINARY DESIGNS, DETAILED DESIGNS, SAFEGUARDS DOCUMENTS AND TENDER DOCUMENTS AND CONSTRUCTION SUPERVISION OF SECOND BARICHO – KAKUYUNI WATER PIPELINE AND TRANSMISSION PIPELINES TO KILIFI AND GANDA TANKS

CONTRACT No.: KE-CWSB-102977-CS-QCBS

SOCIAL SCREENING REPORT FOR THE PROPOSED LOT 1 – SECOND BARICHO_KAKUYUNI RISING MAIN

Prepared By;

SARI CONSULTING LTD in JV with SGAPI and gath CONSULTING ENGINEERS

October 2021

ABBREVIATION

C- ESMMP	Construction Environmental and Social Management and Monitoring Plan
CSR	Cooperate Social Responsibility
CWWDA	Coast Water Works Development Agency
EMCA	Environmental Management and Coordination Act
ESMMP	Environmental and Social Management & Monitoring Plan
ESMMP	Environmental and Social Management and Monitoring Plan
IDP	Internally Displaced Persons
KIMAWASCO	Kilifi-Mariakani Water and Sewerage Company
MAWASCO	Malindi Water and Sewerage Company
NEMA	National Environment Management Authority
NLP	National Land Policy
OP	Operation Policy
RAP	Resettlement Action Plan
WSDP	Water and Sanitation Development Project

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CHAPTER 1 : INTRODUCTION

1.1 Project Background

Coast Water Works Development Agency (CWWDA) under the Water and Sanitation Development Project (WSDP) financed by the Government of Kenya and the World Bank intends to implement the proposed water supply project under LOT 1. The LOT 1 works involves transmission pipeline from Baricho pumping station to a proposed reinforced concrete reservoir at Kakuyuni (herein referred to as "The Project").

The Project is located within Kilifi County. It aims at improving water supply to Malindi, Watamu, Kilifi and Gongoni towns and their surrounding environs including the communities living along the pipeline route within Lango Baya, Kakoneni, Jilore and Kakuyuni centres. The target areas fall within the jurisdiction of two water services providers; namely, Kilifi-Mariakani Water and Sewerage Company (**KIMAWASCO**) and Malindi Water and Sewerage Company (**MAWASCO**). The project will provide a new additional pipeline from Baricho to Kakuyuni, associated electromechanical works and new reservoir at Kakuyuni (Lot I), transmission mains from Kakuyuni reservoir to Ganda tanks (Lot 2) and transmission mains from Kakuyuni reservoir to Kilifi tanks (Lot 3).

The water source, Baricho Well field, has in the recent past undergone significant expansion and rehabilitation works which has increased its capacity by 22,000 m^3/day to a total production of 112,000 m^3/day. Out of the total production, 60,000 m^3/day will be conveyed to Mombasa City through the Mombasa pipeline and the remaining 52,000 m^3/day to Malindi, Watamu, Kilifi and Gongoni towns.

The design capacity of the existing Baricho-Kakuyuni line is 30,000 m^3/day, which is inadequate to deliver the additional amount of water produced. In addition, the capacity of the transmission pipelines from Kakuyuni to Kilifi and Ganda are inadequate and need to be augmented. Consequently, additional parallel pipelines transmission capacity from Kakuyuni to Kilifi and Ganda are required to meet the projected water demands. This report is an Environmental and Social Impact Assessment (ESIA) Comprehensive Project Report (CPR) for the proposed Transmission Pipeline from Baricho to Kakuyuni Tanks (Lot I).

In order to ensure that the project does not negatively impact the physical, biological, chemical and social environment, CWWDA appointed SARI/SGAPI/GATH JV to undertake an Environmental and Social screening report for the project.

This screening report has been prepared in line with the World Bank OPs

1.2 Project Location

The Second Baricho – Kakuyuni Water Pipeline Project, is located in Kilifi County and targets Malindi and Kilifi Sub Counties. Kilifi is one of the six counties in the Coastal region of Kenya and lies between latitude 2°20° and 4°0° South, and between longitude 39° 05° and 40° 14° East and covers a total surface area of 12,610 km^2. It borders the Counties of Tana River to the North, Taita Taveta to the West, Mombasa and Kwale to the South, Lamu County to the North East and the Indian Ocean to the East.

Kilifi County has seven sub counties, namely; Kilifi North, Kilifi South, Ganze, Malindi, Magarini, Rabai and Kaloleni. It has 17 divisions, 54 locations, 175 sub-locations. Magarini Sub-county is the largest while Rabai is the smallest (figure 1-1 below)

The proposed pipeline will be laid from Baricho wellfield, then along the existing CWWDA wayleave and finally on the C103 (Malindi – Ganda – Kakuyuni Salgate Road) road reserve up to Kakuyuni road reserve, Installation of additional electromechanical works will be carried out at the existing Baricho pumping station while the construction of a new water reservoir will be constructed next to the existing water tank at Kakuyuni Boys Secondary School which is a public school.

The sites (CWWDA existing wayleave, C103 road reserve and the site for reinforced concrete reservoir at Kakuyuni High school) ownership for the proposed pipelines and reservoir was verified during consultation and is free from encroachment and therefore no Resettlement issues will be triggered as described by World Bank Operation Policy on Land Acquisition and Involuntary Resettlement.

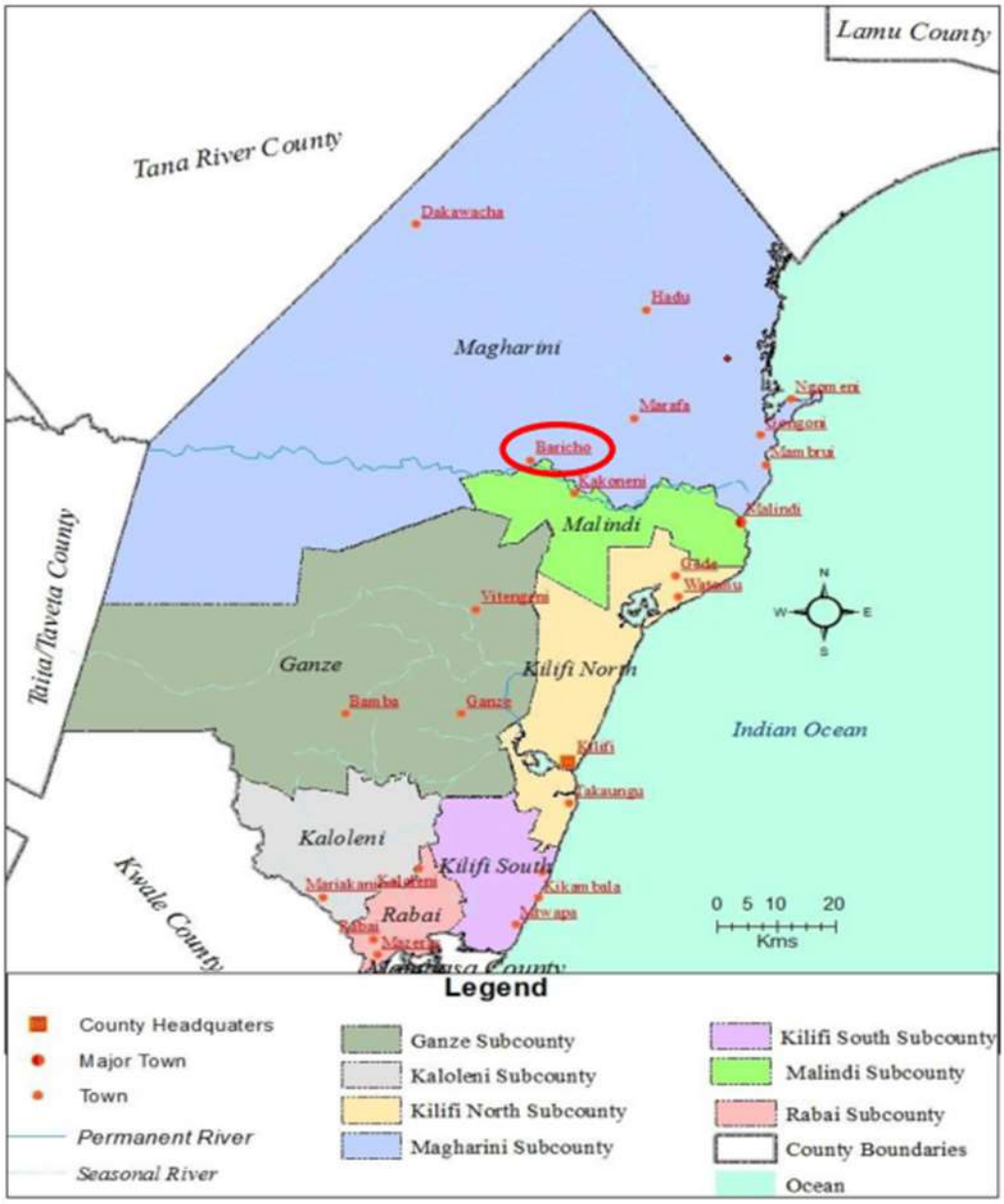


Figure 1-1: A General Map Showing the Sub Counties within Kilifi County. Source Google maps

1.3 Project Beneficiaries

Supply of water in Malindi, Watamu, Kilifi, Gongoni towns and their surrounding environs is rationed. The proposed project will augment water supply to the towns and communities along

the Pipeline route within Lango Baya, Kakoneni, Jilore and Kakuyuni centers so as to meet the projected water demands in the Water Distribution Master Plan.

Construction of a new reinforced concrete reservoir at Kakuyuni Boys Secondary school will also be a milestone towards stabilizing water supply to the targeted towns and villages.

1.4 Objective of the social Screening Report

The main objective of this screening process is to identify and highlight the socio economic and/ or physical displacement that need to be taken into account in the planning, design, installation of additional Electromechanical works at the Baricho water works, laying of a water pipeline rising main from Baricho water works to the proposed Kakuyuni 5,000m^3 reservoir, construction of a new water reservoir of capacity 5,000m^3 at Kakuyuni and rehabilitation of existing system – replacement of non-functional air valves and associated fittings for the proposed water supply project under Lot 1 of second Baricho Kakuyuni pipeline.

This screening will assist in determining if this sub-project requires a Resettlement Action Plan done before its implementation. The aim is to support the sustainable implementation of the proposed works in the project. The screening was carried out at an early stage of the project (i.e. Pre - Feasibility), in accordance with the requirement for World Bank financed projects.

1.5 Methodology for carrying out the Screening

Social screening is the first step in the RAP process, it is carried out to establish the resettlement issues that may arise from the proposed project. The screening involved a desktop review of the project features, the baseline conditions and the design components.

Secondly, the Consultant carried out a site visit to the project area in order to conduct a transect walk through the pipeline routes, tank and water kiosk sites in order to establish the need or lack thereof of a RAP.

The findings of these activities are presented in this report.

CHAPTER 2 : PROJECT DESCRIPTION

2.2 Existing Baricho Water Works

Baricho aquifer is located in Kilifi County and 60km west of Malindi town and currently has an installed capacity of 112,000m^3/day following a recent rehabilitation works that increased the production by 22,000m^3/day. The water is abstracted from the Sabaki Aquifer (on the banks of the river) which is recharged by Sabaki River. There are eleven (11) wells each with capacity of 470 m^3/hr grouped into two (2) wellfields with the downstream group consisting of eight (8) wells and the upstream group consisting of three (3) wells. From the wells water is pumped using submersible Low Lift Pumps (LLPs) to a contact tank (capacity of 5,000 m^3) for chlorination as well as a sump for the High Lift Pumps (HLPs) which deliver the water to Mombasa, Malindi and Kilifi towns. It is noted that according to the Water Master Plan for Water Supply for the Coast Region (Tahal/Bhundia, 2014), the Baricho well field was found to have a potential capacity of 180,000 m^3/day upon full development by the year 2040.

2.4 Existing Water Supply to Mombasa, Kilifi and Malindi Water Companies

The treated water from Baricho plant is evacuated through two (2) pipelines namely: -

- The Sabaki/Mombasa Pipeline (sometimes referred to Baricho/Mombasa Pipeline)
- The Baricho/Kakuyuni Pipeline (sometimes referred to Baricho/Malindi Pipeline)

There are five (5) operational High Lift Pumps (HLP) dedicated to supply Mombasa from the Baricho pump house with three (3) as duty pumps and two (2) as standby pumps. The water is delivered via the Nguu Tatu storage tanks (1No. 18,000 m^3 and 2No. 4,500 m^3 tanks – totaling to 22,500m^3) using a DN800/600mm diameter, 104 km pipeline (with a capacity of 60,000 m^3/day). There is also a booster pumping station located at Lower Ribe that supplies water to the Kaloleni area.

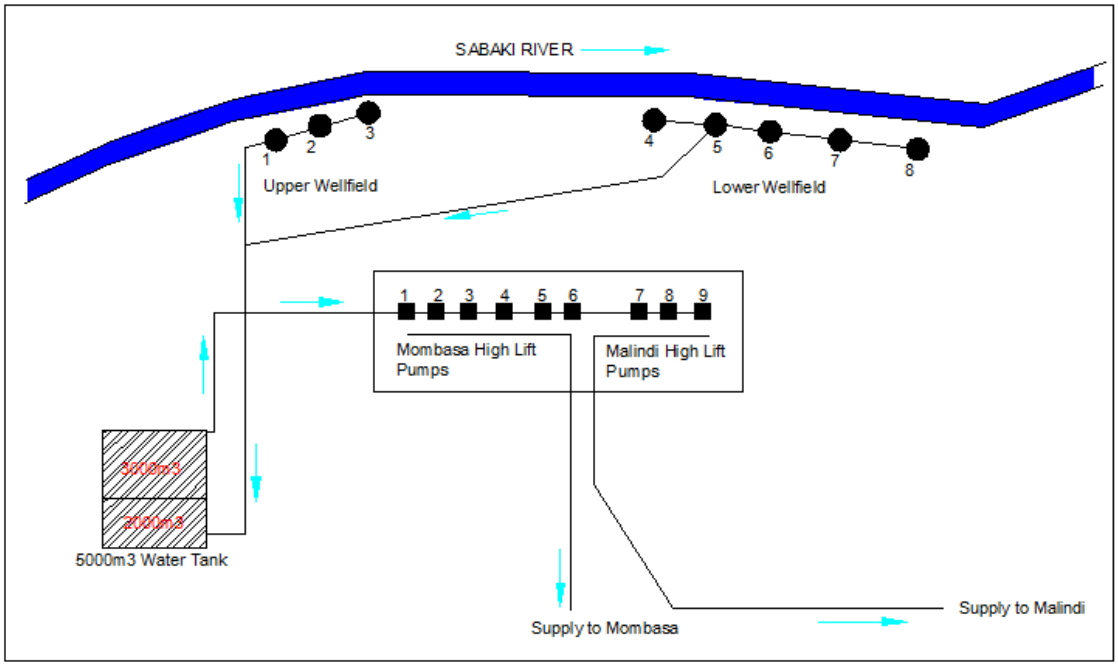


Figure 2-1: Existing water network from Baricho water works

A new pipeline (500 mm diameter, 56 km long, DI) connecting the Kakuyuni terminal reservoir and the Kilifi tank (in Kilifi town) was recently completed in 2019 under Water and Sanitation Services Improvement Program - Additional Financing (WaSSIP-AF). Also constructed under the same project were three new boreholes (9, 10, 11 – see figure below). The pipelines and the boreholes are currently operational.

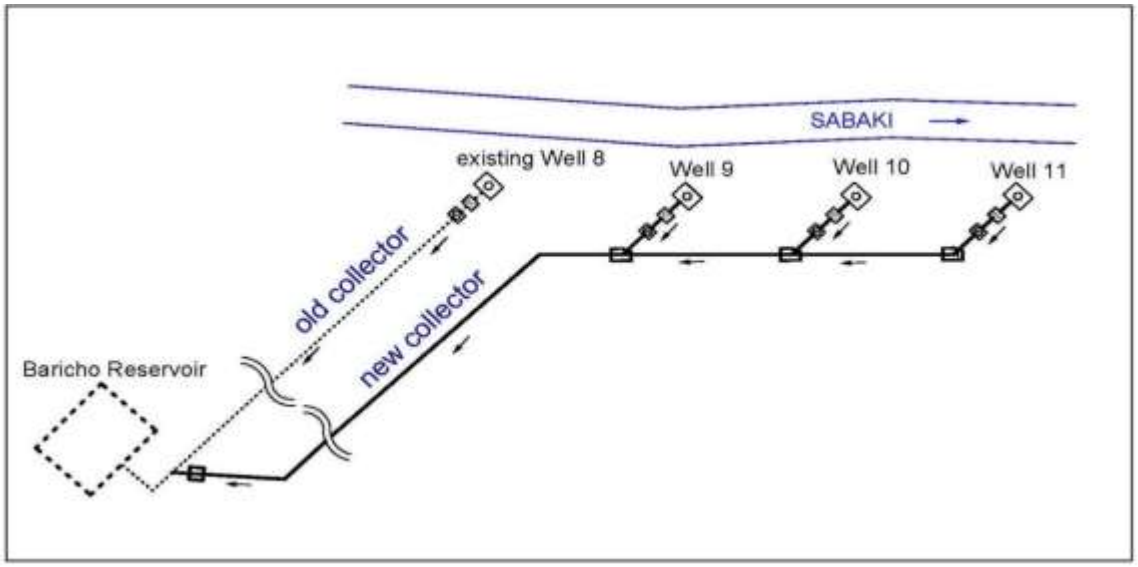


Figure 2-2: Schematic of the recently concluded works

The towns of Malindi, Watamu, Kilifi, Gongoni and the environs receive water supply from Baricho Source Works through the Sabaki-Malindi transmission main. Water is pumped from Baricho to the existing Kakuyuni tank (1,250m^3) through a 29km, DN 600 rising main (with a carrying capacity of 25,000 m^3/day). Water flows from the reservoir by gravity to Ganda junction then branches to Ganda and Kisimani reservoirs from where it flows to the supply areas. There are four (4) transmission pipelines from Kakuyuni reservoir namely: -

- Kakuyuni/Ganda pipeline, 12.3km long, diameters ranging 600-500-450-300mm,
- Kakuyuni/Kilifi pipeline, 56km long, diameter of 500mm,
- Kakuyuni/Gongoni pipeline, 37km long, diameter of 400mm,
- Kakuyuni/Watamu pipelines, 17km long and with diameters of (350mm and 200mm).

2.5 Proposed system

2.5.1 Overview

The proposed project will augment water supply to the towns of Malindi, Watamu, Kilifi and Gongoni and the surrounding environs so as to meet the projected water demands in the Water Distribution Master Plan. This will be achieved through;

- Installation of additional Electromechanical works at the Baricho water works – installation of additional new pumps, surge vessels and associated electrical works;
- Laying of a water pipeline rising main from Baricho water works to Kakuyuni reservoir. The pipeline will be of diameter DN 800mm, steel pipeline, 29km and will be laid mainly along the road reserve of C-103 (Malindi – Ganda – Kakuyuni – Salgate);
- Construction of a new water reservoir of capacity 5,000 m^3 at Kakuyuni. The reservoir will be sited next to the existing water tank and the proposed site belong to Kakuyuni High school
- Rehabilitation of existing system – replacement of non-functional air valves and associated fittings along the existing DN 600mm Baricho-Kakuyuni pipeline.

2.5.2 Rising main from Baricho water works to Kakuyuni reservoir

The proposed Second Baricho – Kakuyuni pipeline (29km, DN 800mm) will be a rising main from the Baricho water works to the proposed new Kakuyuni reservoir. There is sufficient space parallel to the existing pipeline where this new pipeline can be laid along the existing CWWDA wayleave and then onto C 103 KeRRA road (Malindi-Ganda-Kakuyuni-Salgate Road). There is no physical or economic displacement anticipated as currently the way leave is free from any form of encroachment. The google overlay below shows the proposed pipeline route, the pipeline

route will be along the existing CWWDA wayleave (circled in blue) before joining the C103 KeRRA road reserve upto Kakuyuni.

Figure 2-3: The figure showing the proposed pipeline route from the water works to the proposed Kakuyuni reservoir.

2.5.3 Kakuyuni Reservoir

A new Kakuyuni reinforced concrete reservoir with a capacity of 5,000m^{3}is proposed to boost the existing tanks and this will require at least 1.4 acres of land. Other supporting infrastructure to be constructed at Kakuyuni will include the following;

- Access road & parking space;
- Site accommodation for the operator
- Fencing and adequate lighting and
- Drainage.

There is no physical or economic displacement anticipated as currently the proposed site which is part of the public school land is covered with a few scattered shrubs and grass.

2.5.4 Electromechanical works

d) Pumps

There are two sets of high lift pumps in the pump house, the Mombasa high lift pumps and Malindi high lift pumps. The Mombasa high lift pumps are 5 No. and pump the treated water, directly from the delivery pipe, to Nguu Tatu reservoirs (22,500 m^3), on the outskirts of Mombasa town, for the Mombasa pipeline whereas the Malindi high lift pumps are 3 No and pump the treated water, from a 3,000m^3 sump tank, to Kakuyuni reservoirs for the Malindi pipeline. The Nguu Tatu and Kakuyuni reservoirs are on their respective high points and supply water to the consumers by gravity. The Mombasa high lift pumps are operated using auto transformer starters and the Malindi high lift pumps are operated using star delta starters.

Additional pumps are set to be installed to feed the new proposed rising main. The proposed pumping arrangement will include 3 No. high lift pumps (two (2) duty and one (1) standby). The pumps will be sited within the existing pump house and will draw water from the 3,000 m^3 sump tank.

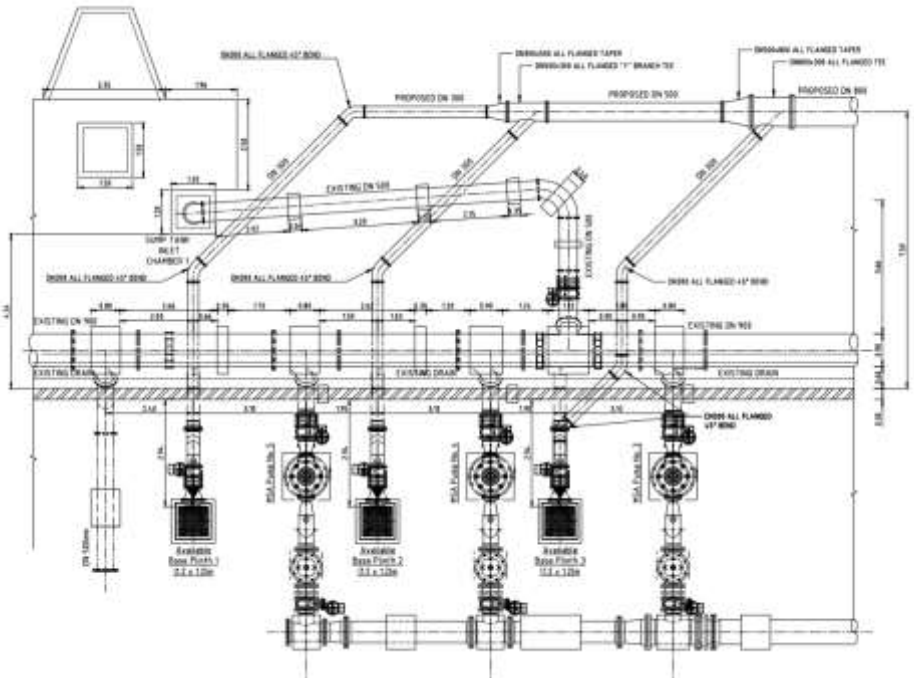


Figure 2-4: The proposed arrangement of the additional pumps

e) Power source, distribution and consumption

The Baricho water works power supply is from the utility Kenya power using 2 No. 33 KV overhead H.T lines, one from the Kilifi 132/33 KV substation and one from the Kakuyuni 220/33 KV substation. The one from Kilifi substation proved unreliable and thus the water works was connected to the new line from the Kakuyuni sub station and metered on the CI3 tariff.

Figure 2-5: Baricho Water Works 33KV overhead H.T lines and substation

The key electrical loads at Baricho Water Works are high lift pumps, low lift borehole pumps, office block and staff quarters. The other loads are compressors, lighting and power loads for the other auxiliary buildings which are switch rooms and pump rooms.

Summary of the key energy consuming equipment is as tabulated below:

Table 2-1: Inventory of key energy consuming equipment at Baricho Water Works

Item	Description	Quantity (No of pumps)
1.	Mombasa High Lift Pump pumping capacity of 833m^3/hr. and a 840KW/3.3KV motor	5
2.	Malindi High Lift Pump pumping capacity of 583m^3/hr. and a 250KW/415V motor	3
3.	Low Lift Borehole pumps	
	e) Bore hole pump pumping capacity of 470m^3/hr. and a 135KW/415V motor (boreholes 2, 6A & 8)	3

Item	Description	Quantity (No of pumps)
	f) Bore hole pump pumping capacity of 470 m^3/hr. and a 160 KW/415V motor (boreholes 1 & 3)	2
	g) Bore hole pump pumping capacity of 470 m^3/hr. and a 180 KW/415 V motor (boreholes 4, 5 &7)	3
	h) Bore hole pump pumping capacity of 350 m^3/hr., each rated 110 kW (boreholes 9, 10 & 11)	3
4.	Surge Vessel Compressor Set for Mombasa line with a capacity of 30 bar and rated at 13.5 kW	1
5.	Surge Vessel Compressor Set for Malindi line with a capacity of 1.05 bar and rated at 6.89 kW	1
6.	Street lighting	
	f) 8 M galvanized single arm lighting pole with 125 W Mercury Vapour lamp	40
	g) 6 M galvanized single arm lighting pole with 125 W Mercury Vapour lamp	22
7.	Office Block	1
8.	Staff Quarters	97

(i.) Proposed Electrical Works

- The pumping arrangement will utilize 3 pumps (2 duty and 1 standby). With the 2 No. online pumps this presents an electrical load of 630 kW on the low voltage lines.
- A transformer rated at 2000 KVA is to be installed rated at 33KV/433V to replace TX 4 at the 33 KV switchyard and to supply power to a low voltage panel through an Automatic Voltage Regulator rated at 2000 KVA. The AVR is to regulate the voltage on low voltage panel as the pumping station has been experiencing low voltage which has been damaging equipment.
- A low voltage panel rated at 2000 Amperes is to be established to supply power to the 3 No. pumps. It is intended that the pump motors will be of Variable Frequency Drive (VFD). Space for mounting the low voltage panel will be located in the main pump hall. Further KPLC Ltd is to be contacted for the extra electrical load imposed on their power lines

- A SCADA system to monitor pumping and all electrical parameters is to be incorporated in the electrical control system for the pumping system whereby control functions can be carried out remotely.
- The client is planning to install solar firm in future to cut on the energy cost

CHAPTER 3 . PUBLIC PARTICIPATION & STAKEHOLDER CONSULTATION

As part of the screening process, the Consultant carried out community consultation forums. The Consultant conducted three meetings, one on May 6, 2021 at Lango Baya sub location and Jilore location and the other two on May 7,2021 at Kakuyuni sub location and Ganda sub location. The attendees of all meetings comprised of community leaders (the area Chiefs) other local leaders (Balozis) and community members from all villages.

The Lango Baya meeting comprised of 25 attendees. During this meeting, it was established that the proposed project would use the existing road reserve and the CWWDA acquired way leave for pipe laying hence no individual would be displaced or resettled during project implementation phase. Consultation with KeRRA indicated that the necessary permits be obtained before commencement of construction works along the reserves. The community fully agreed to provide assistance where necessary during implementation.

The Jilore meeting was conducted within the Chief's camp and had 23 people in attendance. The community leaders raised concern over the adequacy of the water to the individual villages, now that the water source (Baricho Wellfields) was a few kilometers away from their households. The residents requested for water provision and provision of a reservoir tank that would fully be serving them.

The Kakuyuni meeting had 22 persons in attendance. Their major concern was the Kakuyuni Boys piece of land that had been selected as the area where the storage tank will be built. They informed the meeting that the school management and the CWWDA were concluding on negotiation for CWWDA to construct a fully furnished modern library for the school as part of the Corporate Social responsibility. The negotiations have been concluded and a Memorandum of Understanding (MoU) signed between the two parties. The MoU is provided in annex 5 of this report

Minutes of the meetings are provided in appendix 2 of this report.

CHAPTER 4 : IMPACTS OF THE PROJECT

This section outlines the potential impacts that are anticipated and will be associated with the proposed project activities. The impacts will be related to activities carried out during construction, commissioning, operations, maintenance and decommissioning phases.

4.1 Positive Impacts

- Employment opportunities: With the construction of the proposed project, there will be employment opportunities for both professionals and unskilled workers; earnings from the wages will improve their living standards.
- Creation of a market for construction materials - The project will require materials, some of which will be sourced locally and some internationally.
- Economic growth - Through the use of locally available materials
- Injection of money into the local economy: A large sum of the project money shall be released into the local economy due to the construction activities
- Creation of wealth- The proposed project will ultimately provide revenues to the beneficiaries and expand the wealth base for the nation as a whole. Further, the value of land within the project area will rise thus improving on the existing wealth for the residents.
- Improved well-being of women and children: Water accessibility at homesteads would translate to time saving by the women. Time saved thus would be invested in other engagements that could bring financial benefits to the family. Children also bear the brunt of water borne diseases while women are tied down to provide nursing care to the sick family members
- Improved accessibility to clean and reliable water supply-The proposed water supply project Towns of Malindi, Kilifi, Watamu and Gongoni and their surrounding environ including communities along the pipeline route of Lango Baya, Kakoneni, Jilore and Kakuyuni centers. This will reduce the water shortage experienced in the area.
- Improved revenue to both Malindi and Kilifi-Mariakani Water and Sewerage Companies from increased customer base as the proposed project will increase the number of residents being served by the water companies. It will also make the supply reliable thus increasing the revenue base. Further, this will improve sustainability of the companies

4.2 Negative Impacts

4.3 Land Take

The new project interventions project will be implemented on road reserves, CWWDA way leave and at Baricho Boys Secondary School which is publicly owned hence no land will be acquired for the proposed project activities. In addition, there are no encroachment on the proposed new sites and existing sites where rehabilitations will be undertaken.

4.4 Loss of livelihood

With the provision of safe adequate and reliable water there is envisaged to be minimal negative impact on livelihood of some household this is due to the fact that some residents rely on water provision from water vendors. It will be prudent for the contractor to engage the vendors in available employment opportunities. The vendors should also be sensitized on available ways /means of earning income

4.5 Impact on trees and crops

During the screening it was observed that there will be loss of shrubs and grass (pipeline route and tank site) at the site during clearing. No loss of trees and crops is anticipated. The contractor will avoid cutting trees as much as possible and replant grass in the affected areas after completion of works on site with vegetation

4.6 Impact on structures

No negative impact will be expected during construction

4.7 Impacts on Public Health

Some of the public health issues related to construction works are Covid 19, HIV/AIDS and other communicable and sexually transmitted diseases (STDs). It has been observed that construction works and projects increase disease prevalence through sexual interactions between project staff and local communities. However, camps will be put up that might attract this behavior. The contractor will, as part of each workers initial orientation and on-going education, provide public education information about Covid 19, HIV/AIDS and prevention measures. Condoms, hand washing water and soap will be made available to project workers at no cost. This impact is however considered minimal

Proposed tank site with a few shrubs

Pipeline route free from encroachment

Figure 4-1: Sample photos of the proposed site

CHAPTER 5 : CONCLUSION AND RECOMMENDATION

5.1 Conclusion

Based on the above social screening results, the project has no Project Affected Persons per se as tank site is publicly owned, the Client will construct a fully furnished modern library for the school as a part of corporate social responsibility. This means therefore that

1. In accordance to World Bank OP-on Land Acquisition and Involuntary Resettlement and the Kenyan Law, no PAPs were identified by the project.
2. There is ***no need of carrying out*** a RAP since the project will not be associated with any form of physical / economic displacement.

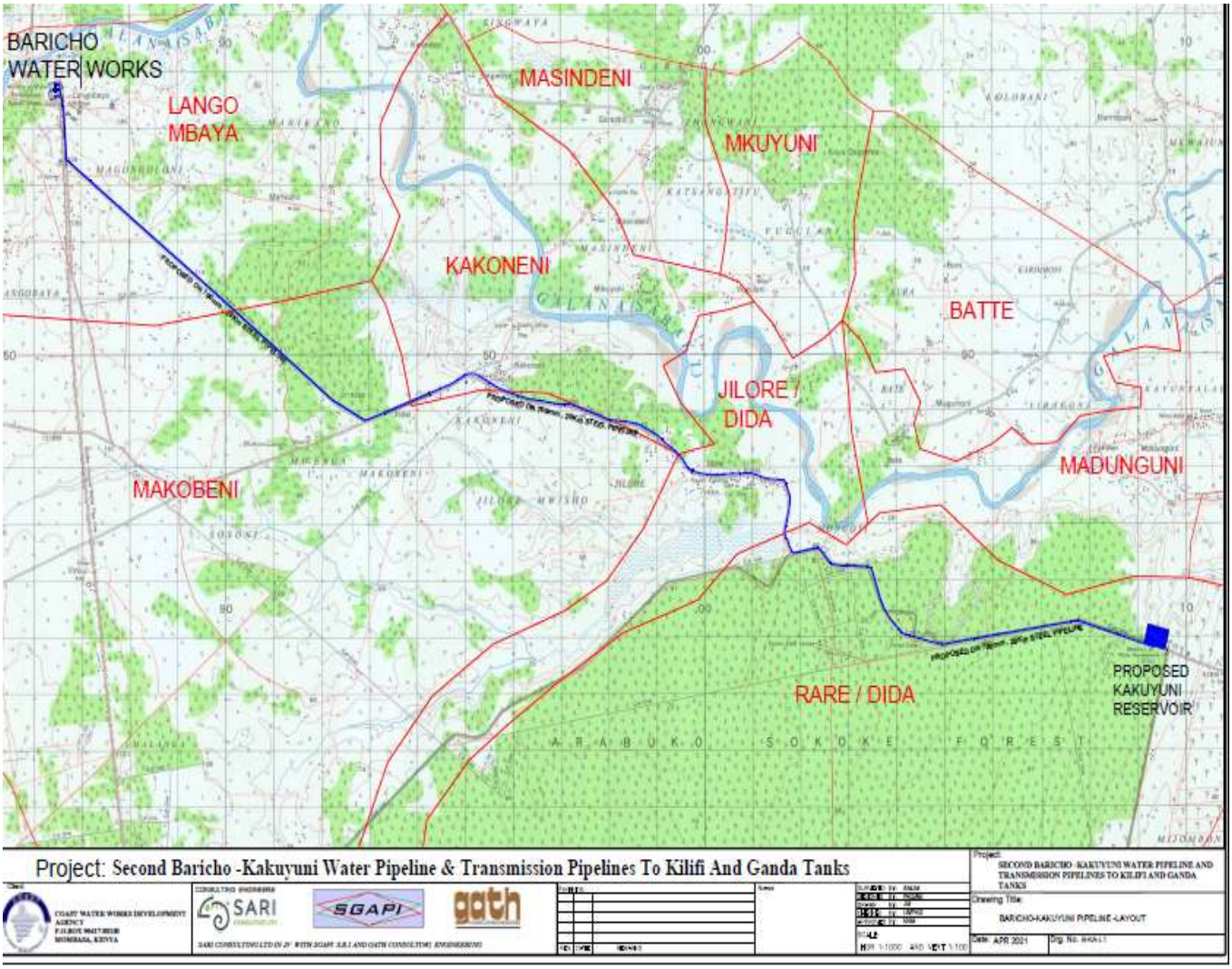
5.2 Recommendation

It is recommended that

- There is no economic or physical displacement anticipated, however, the Contractor should mitigate any anticipated impacts as guided by the Environmental and Social Management Plan provided in the ESIA report in order to ensure protection of social welfare of the resident and the environment.
- The client to consider provision of additional water kiosk and installation of water storage tank in each village as requested by the area residents

APPENDICES

Appendix 1: Project Layout



Appendix 2: Minutes and Attendance Sheet

CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF PRELIMINARY DESIGNS, DETAILED DESIGNS, SAFEGUARDS DOCUMENTS AND TENDER DOCUMENTS AND CONSTRUCTION SUPERVISION OF SECOND BARICHO – KAKUYUNI WATER PIPELINE AND TRANSMISSION PIPELINES TO KILIFI AND GANDA TANKS

MINUTES FOR PUBLIC CONSULTATION MEETINGS AND KEY STAKEHOLDERS INTERVIEWS HELD ON 6TH MAY 2021 AT LANGO BAYA

NATURE OF MEETING:	**PUBLIC CONSULTATION**
PARTIES IN ATTENDANCE:	**CONSULTANT & COMMUNITY**
DATE:	**MAY 6TH, 2021**
VENUE:	**LANGO BAYA**

MINUTES FOR PUBLIC CONSULTATION MEETINGS AND KEY STAKEHOLDERS INTERVIEWS HELD ON 6TH MAY 2021 AT LANGO BAYA

MEMBERS PRESENT- LIST OF ATTENDANCE IS ATTACHED

No.	Name	Organisation	Designation
1.	Boniface Kogi	SGAPI SARI GATH	A.E
2	Lydia Mbogo	SGAPI SARI GATH	E.O
3	Joseph Mulusya	SGAPI SARI GATH.	Surveyor
4	Mercy Makadu	SGAPI SARI GATH	Sociologist
5	Fredrick Charo		Assistant Chief
6	Rehema Said		Resident
7	Onesmus Masha		Resident
8	Mwanakombo Bambulo		Resident
9	Samuel Wanje		Resident
10	Jesca Dama		Resident
11	Kahonzi Baya		Resident
12	Nelson Mbogo		Resident
13	Mwalimu Kahindi		Resident
14	William Baya		Resident
15	Christine Chengo		Resident
16	Florence Charo		Resident
17	Irene Kitsao		Resident
18	Franklin Kaingu		Resident
19	Jonathan Mwagandi		Resident
20	Margaret Kamande		Resident
21	Hannington Mulikya		Resident
22	Geoffrey Muriithi		Resident

23	Wilson Sulubu		Resident
24	Harrison Kadenge		Resident
25	David Gunga		Resident

ABBREVIATIONS

AE	Assistant Engineer
EO	Environmental officer
AOB	Any Other Business
Consultant	SARI GATH SGAPI

AGENDA

9. Introduction
10. Reason for stakeholder Consultation
11. Current Water Sources and Challenges
12. Interventions to address the Challenges
13. Potential project Impacts (Positive and Negative)
14. Comments and Responses
15. A.O.B
16. Adjournment

MINUTE NO:	DESCRIPTION	ACTION BY
Mtg.1-01	**INTRODUCTION** The Assistant Chief called the meeting to order at 1000 HRS. The meeting began with a word of prayer that was led by one of the residents. This was followed by brief self-introduction by all residents. The chief then invited the consultants (Assistant Engineer, Environmental Officer and Surveyor) who introduced themselves then stated the agenda of the meeting that was adopted.	**All**
Mtg.1-02	**REASON FOR STAKEHOLDER CONSULTATION** The Assistant Engineer gave a brief introduction of the Project scope. Then later welcomed the Environmental officer who briefed the participants on the reasons for holding a public meeting for the project. The participants were informed that this was to give them a chance to air their views about the proposed project, create awareness, request for their support, as well as adherences to legal requirement that requires the proponent to inform the area resident about their intention to implement a project in their area before commencement. Further to give them a chance to air their views, assist in anticipating impacts and recommending mitigations measures and create awareness of the proposed intervention	**Consultant**
Mtg.1-03	**CURRENT WATER SOURCES AND CHALLENGES** The stakeholders commented on the fact that water has been a major challenge due to its frequent shortages, high prices and occasional broken pipes despite the fact that they lived near the water source.	**Consultant**
Mtg.1-04	**INTERVENTIONS TO ADDRESS THE CHALLENGE** The Assistant Engineer mentioned the project implementation timelines and stated that the project would tentatively begin around October 2021 and take about a year to complete. He further stated that the pipes of DN 800mm for 29 km, there would also be a 5,000m^3 reinforced concrete tank.	**Consultant**
Mtg.1-05	**POTENTIAL PROJECT IMPACTS (POSITIVE and NEGATIVE)** **Positive project impact**	

	• Accessibility to clean and reliable water, hygiene and sanitation, reduced water and Improved sanitation burden to women, increased land values in the project area. **Negative project impact** • Impacts on biophysical environment (Vegetation destruction, soils, water resources pollution or over abstraction) • Social Environment (labor influx, child labor, gender inclusivity, human rights, teenage pregnancies, school dropouts, HIV and AIDS, resettlement issues.) • Health and Safety Impacts (Noise and vibrations, air pollution, accidents on site, fire disasters, public health)	**Consultant** **Consultant**
Mtg.1-07	**<u>COMMENTS AND RESPONSES</u>** **Comment – Wayleave** The residents requested know if the project will affect them in terms of displacement in anyway. **Response** The consultant informed the meeting that there will be no Demolitions or Displacements that were anticipated since the pipelines had been designed to follow the way leaves and this was confirmed during the surveys that were conducted - no one would be displaced and no private property would be interfered with. **Comment – Job Requirements** The residents wanted to know if they will have to produce NHIF, NSSF and Certificate of Good conduct before they can be recruited. **Response** They were informed that those requirements are not only mandatory but also a basic requirement of the law of Kenya, however, for casual labourers an Identification Card is mandatory. **Comment – Backfilling request** The residents wanted to know how prompt the backfilling will be once excavation has been done. **Response**	Resident Consultant Resident Consultant Resident

	The consultant informed the meeting that No access points will be left open without provision of access points or being backfilled for more than a day. **Comment – Compensation** The community wanted to know if there will be any land and way leaves compensation. **Response** For the pipeline route, it was noted that it will use the existing road reserve. The new proposed tank will be constructed at Kakuyuni Boys Secondary School and the client had were in negotiation to come up with a mutual agreement. In additional relevant permit from road authorities will be obtained before commencement of works along the reserves and there were no private properties, trees or crops that would be interfered with hence no one would require compensation **Comment – Reinstatement** The residents wanted to know if reinstatement of pipes that will be damaged during excavation will be considered **Response** The consultant informed the meeting that all reinstatements will be adequately handled by the contractor.	Consultant Resident Consultant Resident Consultant Resident Consultant
Mtg.1-08	**A.O.B** The Chief requested for cooperation from the community for smooth running of the project.	**Chief**
Mtg. 1-09	**Adjournment** The meeting was closed with a word of prayer from a resident at 1300 HRS.	**All**

MINUTES SIGNED AND AGREED UPON BY:

For and on behalf of Client (CWWDA)

SIGN..... DATE 4-06-2021

For and on behalf of Local Administration (Assistant Chief)

SIGN..... DATE 04/06/2021

ASST. CHIEF
LANGOBAYA SUB-LOCATION
LANGOBAYA LOCATION
DATE 04/06/2021

For and on behalf of Consultant (SARI GATH SGAPI)

SIGN..... DATE 4/6/2021

BY Lydiah Mbogo DATE 4/6/2021

CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF PRELIMINARY DESIGNS, DETAILED DESIGNS, SAFEGUARDS DOCUMENTS AND TENDER DOCUMENTS AND CONSTRUCTION SUPERVISION OF SECOND BARICHO – KAKUYUNI WATER PIPELINE AND TRANSMISSION PIPELINES TO KILIFI AND GANDA TANKS

MINUTES FOR PUBLIC CONSULTATION MEETINGS AND KEY STAKEHOLDERS INTERVIEWS HELD ON 7TH MAY 2021 AT KAKUYUNI

NATURE OF MEETING:	**PUBLIC CONSULTATION**
PARTIES IN ATTENDANCE:	**CONSULTANT & COMMUNITY**
DATE:	**MAY 7TH , 2021**
VENUE:	**KAKUYUNI**

MINUTES FOR PUBLIC CONSULTATION MEETINGS AND KEY STAKEHOLDERS INTERVIEWS HELD ON 7TH MAY 2021 AT KAKUYUNI

MEMBERS PRESENT- LIST OF ATTENDANCE IS ATTACHED

No.	Name	Organization	Designation
1.	Boniface Kogi	SGAPI SARI GATH	A.E
2	Lydia Mbogo	SGAPI SARI GATH	E.O
3	Joseph Mulusya	SGAPI SARI GATH.	Surveyor
4	Alphonce Kitsao Jefwa	Administration	Assistant chief
5	Farida Garama		Assistant Chief
6	Bendera Thoya		Village Elder
7	Naphtal Birya	Interior	
8	Samsom Kamunga		MCA
9	Nixon Mramba		
10	Samuel Jefwa		
11	Kithi Robert		
12	Benjamin Karisa		Resident
13	Masoud Ali		Resident
14	Athman Fadhili		Resident
15	Athmani Mangi		Resident
16	Ruth Yongo		Resident
17	Cosmas Mramba		Resident
18	Shalet Karisa		Resident
19	Vincent Karisa		Resident
20	Paul Mtawali		Resident

21	Francis Kitsao		Resident
22	Flevian Mwaria		Resident

ABBREVIATIONS

AE	Assitant Engineer
EO	Environmental officer
AOB	Any Other Business
Consultant	SARI GATH SGAPI

AGENDA

9. Introduction
10. Reason for stakeholder Consultation
11. Current Water Sources and Challenges
12. Interventions to address the Challenges
13. Potential project Impacts (Positive and Negative)
14. Comments and Responses
15. A.O.B
16. Adjournment

MINUTE NO:	DESCRIPTION	ACTION BY
Mtg.1-01	**INTRODUCTION** The Chief called the meeting to order at 1015hrs. The meeting began with a word of prayer that was led by one of the residents. This was followed by brief self-introduction by all residents. The chief then invited the consultants (Assistant Engineer, Environmental Officer and Surveyor) who introduced themselves then stated the agenda of the meeting that was adopted.	**All**
Mtg.1-02	**REASON FOR STAKEHOLDER CONSULTATION** The Assistant Engineer gave a brief introduction of the Project scope. Then later welcomed the Environmental officer who briefed the participants on the reasons for holding a public meeting for the project. The participants were informed that this was to give them a chance to air their views about the proposed project, create awareness, request for their support, as well as adherences to legal requirement that requires the proponent to inform the area resident about their intention to implement a project in their area before commencement. Further to give them a chance to air their views, assist in anticipating impacts and recommending mitigations measures and create awareness of the proposed intervention.	**Consultant**
Mtg.1-03	**CURRENT WATER SOURCES AND CHALLENGES** The stakeholders commented on the fact that water has been a major challenge due to its frequent shortages, high prices and occasional broken pipes despite the fact that they lived near the water source.	**Consultant**
Mtg.1-04	**INTERVENTIONS TO ADDRESS THE CHALLENGE** The Assistant Engineer mentioned the project implementation timelines and stated that the project would tentatively begin around October 2021 and take about a year to complete. He further stated that the pipes of	

	DN 800mm for 29 km and there would also be a reinforced concrete reservoir of capacity 5,000m^3 tank.	**Consultant**
Mtg.1-05	**POTENTIAL PROJECT IMPACTS (POSITIVE and NEGATIVE)** **Positive project impact** • Accessibility to clean and reliable water, hygiene and sanitation, reduced water and Improved sanitation burden to women, Increased land values in the project area. **Negative project impact** • Impacts on biophysical environment (Vegetation destruction, soils, water resources pollution or over abstraction) • Social Environment (labor influx, child labor, gender inclusivity, human rights, teenage pregnancies, school dropouts, HIV and AIDS,) • Health and Safety Impacts (Noise and vibrations, air pollution, accidents on site, fire disasters, public health)	**Consultant**
Mtg.1-07	**COMMENTS AND RESPONSES** **Comment – Cost of the proposed project** The residents requested to know the total project cost and how much was set aside for the CSR **Response** The consultant informed the meeting that the project cost is approximately Ksh 2 billion, the residents were advised that during implementation and based on the budget some CSR proposals may be considered **Comment – Functionality of the new proposed pipeline** The community wanted to know if they will be allowed to get water from the new pipeline once its complete. **Response** The community will use the existing pipeline and additional water kiosks will be considered, however the new proposed rising main will only be used to supply water to Kakuyuni tanks. **Comment – Job Requirements**	Resident Consultant Resident

	The residents wanted to know if they will have to produce NHIF, NSSF and Certificate of Good conduct before they can be recruited.	Consultant
	Response They were informed that those requirements are not only mandatory but also a basic requirement of the law of Kenya, however, for casual labourers an Identification Card is mandatory.	Resident
	Comment – Sound Pollution The residents wanted to know how sound pollution from the heavy machinery will be mitigated since one of the construction site is near a school compound (Proposed Kakuyuni Tank).	Consultant
	Response Minimal use of machinery will be used and when avoidable, use of machinery will be done with controlled noise production	Resident
	Comment – Compensation The community wanted to know if there will be any land and way leaves compensation.	Consultant
	Response For the pipeline route, it was noted that it will use the existing road reserve. The new proposed tank will be constructed at Kakuyuni Boys Secondary School and the client had were in negotiation to come up with a mutual agreement. In additional relevant permit from road authorities will be obtained before commencement of works along the reserves and there were no private properties, trees or crops that would be interfered with hence no one would require compensation	Resident
	Comment – Non-Operational Kiosks The residents wanted to know if they were any plans set aside for the non-functional kiosks.	Consultant
	Response The non-operational kiosks will be rehabilitated; MAWASCO and KIMAWASCO will revive the existing kiosks once the 2nd pipeline is laid	Resident
Mtg.1-08	**A.O.B**	Consultant

	The Chief requested for cooperation from the community for smooth running of the project.	**Chief**
Mtg. 1-09	**Adjournment** The meeting was closed with a word of prayer from a resident at 1130HRS	**All**

MINUTES SIGNED AND AGREED UPON BY:

For and on behalf of Client (CWWDA)

SIGN..... DATE 4-06-2021

For and on behalf of Local Administration (Assistant Chief)

SIGN..... DATE 4TH JUNE 2021.

For and on behalf of Consultant (SARI GATH SGAPI)

SIGN..... DATE 4/6/2021

BY Lydiah Mbogo DATE 4/6/2021

CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF PRELIMINARY DESIGNS, DETAILED DESIGNS, SAFEGUARDS DOCUMENTS AND TENDER DOCUMENTS AND CONSTRUCTION SUPERVISION OF SECOND BARICHO – KAKUYUNI WATER PIPELINE AND TRANSMISSION PIPELINES TO KILIFI AND GANDA TANKS

MINUTES FOR PUBLIC CONSULTATION MEETINGS AND KEY STAKEHOLDERS INTERVIEWS HELD ON 6TH MAY 2021 AT JILORE

NATURE OF MEETING:	**PUBLIC CONSULTATION**
PARTIES IN ATTENDANCE:	**CONSULTANT & COMMUNITY**
DATE:	**MAY 6TH, 2021**
VENUE:	**JILORE**

MINUTES FOR PUBLIC CONSULTATION MEETINGS AND KEY STAKEHOLDERS INTERVIEWS HELD ON 7TH MAY 2021 AT JILORE

MEMBERS PRESENT- LIST OF ATTENDANCE IS ATTACHED

No.	Name	Organisation	Designation
1.	Boniface Kogi	SGAPI SARI GATH	A.E
2	Lydia Mbogo	SGAPI SARI GATH	E.O
3	Joseph Mulusya	SGAPI SARI GATH.	Surveyor
4	Mercy Makadu	SGAPI SARI GATH	Sociologist
5	Charles Mulewa		Chief
6	Nelly Kadzeha		Assistant Chief
7	Mwamure Masha		Resident
8	Hinzano Kadzeha		Resident
9	Ulice Mthengo		Resident
10	Amos Kahindi		Resident
11	John Chea		Resident
12	Christine Mwathethe		Resident
13	Nickson Mitsanze		Resident
14	Austin Mwamure		Resident
15	Alfred Kahindi		Resident
16	Elias Thoya		Resident
17	Peter Charo		Resident
18	Lucy Jumwa		Resident
19	Annet Katunda		Resident
20	Monica Maita		Resident
21	Lillian Sidi		Resident
22	Adija Munala		Resident

23	Pauline Kadzomba		Resident

ABBREVIATIONS

AE	Assistant Engineer
EO	Environmental officer
AOB	Any Other Business
Consultant	SARI GATH SGAPI

AGENDA

9. Introduction
10. Reason for stakeholder Consultation
11. Current Water Sources and Challenges
12. Interventions to address the Challenges
13. Potential project Impacts (Positive and Negative)
14. Comments and Responses
15. A.O.B
16. Adjournment

MINUTE NO:	DESCRIPTION	ACTION BY
Mtg.1-01	**INTRODUCTION** The Chief called the meeting to order at 1400hrs. The meeting began with a word of prayer that was led by one of the residents. This was followed by brief self-introduction by all residents. The chief then invited the consultants (Assistant Engineer, Environmental Officer and Surveyor) who introduced themselves then stated the agenda of the meeting that was adopted.	**All**
Mtg.1-02	**REASON FOR STAKEHOLDER CONSULTATION** The Assistant Engineer gave a brief introduction of the Project scope. Then later welcomed the Environmental officer who briefed the participants on the reasons for holding a public meeting for the project. The participants were informed that this was to give them a chance to air their views about the proposed project, create awareness, request for their support, as well as adherences to legal requirement that requires the proponent to inform the area resident about their intention to implement a project in their area before commencement. Further to give them a chance to air their views, assist in anticipating impacts and recommending mitigations measures and create awareness of the proposed intervention.	**Consultant**
Mtg.1-03	**CURRENT WATER SOURCES AND CHALLENGES** The stakeholders commented on the fact that water has been a major challenge due to its frequent shortages, high prices and occasional broken pipes despite the fact that they lived near the water source.	**Consultant**
Mtg.1-04	**INTERVENTIONS TO ADDRESS THE CHALLENGE** The Assistant Engineer mentioned the project implementation timelines and stated that the project would tentatively begin around October 2021 and take about a year to complete. He further stated that the pipes of DN 800 for 29 km and DN 600 for 12.5 km, there would also be a 5,000m^3 tank.	**Consultant**

Mtg.1-05	**POTENTIAL PROJECT IMPACTS (POSITIVE and NEGATIVE)** **Positive project impact** • Accessibility to clean and reliable water, hygiene and sanitation, reduced water and Improved sanitation burden to women, Increased land values in the project area. **Negative project impact** • Impacts on biophysical environment (Vegetation destruction, soils, water resources pollution or over abstraction) • Social Environment (labor influx, child labor, gender inclusivity, human rights, teenage pregnancies, school dropouts, HIV and AIDS, resettlement issues) • Health and Safety Impacts (Noise and vibrations, air pollution, accidents on site, fire disasters, public health)	**Consultant**
Mtg.1-07	**COMMENTS AND RESPONSES** **Comment – Compensation** The residents requested to know if they will receive compensation if disturbed or displaced during project construction. **Response** For the pipeline route, it was noted that it will use the existing road reserve. The new proposed tank will be constructed at Kakuyuni Boys Secondary School and the client had were in negotiation to come up with a mutual agreement. In additional relevant permit from road authorities will be obtained before commencement of works along the reserves and there were no private properties, trees or crops that would be interfered with hence no one would require compensation **Comment – Pipeline route** The community wanted to know the pipeline route. **Response** They were informed that the pipeline will follow the old pipeline way leave to the proposed reservoir at Kakuyuni **Comment – CSR** The community requested to know if the project will consider any CSR	Resident Consultant Resident Consultant

	Response The consultant informed the meeting that the project cost is approximately Ksh 2 billion, the residents were advised that during implementation and based on the budget some CSR proposals may be considered	Resident Consultant
Mtg.1-08	**A.O.B** The Chief requested for cooperation from the community for smooth running of the project.	**Chief**
Mtg. 1-09	**Adjournment** The meeting was closed with a word of prayer from a resident at 1630HRS.	**All**

MINUTES SIGNED AND AGREED UPON BY:

For and on behalf of Client (CWWDA)

SIGN..... DATE 4-06-2021

For and on behalf of Local Administration (Chief)

SIGN..... CHIEF JILORE LOCATION P. O. BOX 1, MALINDI DATE 4.6.2021

For and on behalf of Consultant (SARI GATH SGAPI)

SIGN..... DATE 4/6/2021

BY Lydiah Mbogo DATE 4/6/2021

Attendance Sheets

KEY INFORMANTS.

THE WORLD BANK IBRD - IDA | WORLD BANK GROUP

SARI CONSULTING LTD

SGAPI

gath

WATER AND SANITATION DEVELOPMENT PROJECT (WSDP)

CONSULTANCY SERVICES FOR PREPARATION OF PRELIMINARY DESIGNS, FEASIBILITY STUDY, DETAILED DESIGNS, SAFEGUARDS DOCUMENTS AND TENDER DOCUMENTS AND CONSTRUCTION SUPERVISION OF SECOND BARICHO – KAKUYUNI WATER PIPELINE AND TRANSMISSION PIPELINES TO KILIFI AND GANDA TANKS

LIST OF ATTENDANCE – Public Consultation Meetings and Key Stakeholders Interviews **DATE:** ~~April ~~ ~~2021~~ May 05 -08 2021

No.	Name	Organization/Designation	Email	Phone No	Signature
1.	ISAAC [illegible]	MAWASCO / TM	[illegible]	0723161671	
2.	Lydiah Mbogo	SARI / GATH - Consultant	lydiawanjiru@gatho.com	0725179521	
3.	Bonifale Kanau Kogi	SARI/Gath - Consultant Assistant Engineer	Kogi.ban@gmail.c	0715941[illegible]	
4.	Joseph Mulusya	SARI / GATH - Consultant Surveyor	mulusyaj@gmail.com	0797016975	
5.	Mercy Makadu	SARI / GATH - Consultant	mercymakadu@gmail	0700157376	
6.	COSMAS KAI	MAWASCO / TECH OFFICER	Coskai80@gmail.com	0714442272	
7.	Jacinta M. Makau	CGK / Planner	jantmbithe@yahoo.com	0721673041	
8.	EMMANUEL KAZUNGU MAITHA	County G. of Kilifi ADMIN.	Edmaitha509@gmail.com	0726035047	
9.	JULIUS Fondo	MUNICIPALITY OF MALINDI - ADMINISTRATOR	jeyfondo123@gmail.com	0729855[illegible]	

No.	Name	Organization/Designation	Email	Phone No	Signature
10.	Linet Rabibu	Ag Env Officer Malindi SC	linetzabibu@gmail	0791705865	
11.	John Kipsiwa	INTERIOR	olcomalindi2016@gmail.com	0722175635	
12.	HELLEN UMAZI MATSUMA	ASSISTANT CHIEF		0720301180	
13.	Hezekiah Mwarua	MD-KIMAWASCO	hmwarua@kiliwater.co.ke	0721379956	
14.	Eng. G. Kiiji Kaayo	CDWES	kiijigeorge49@gmail.com	0715895	
15.	Kutswa Diallo	CC - Kilifi		0722624624	
16.	Joseph Mbeya	DCC Kilifi North		0720915	
17.	Felix Mathia	DCC - Kilifi	fMathia@gmail.com	0720202-462	
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KEY INFORMANTS

THE WORLD BANK IBRD • IDA | WORLD BANK GROUP

WATER AND SANITATION DEVELOPMENT PROJECT (WSDP)

CONSULTANCY SERVICES FOR PREPARATION OF PRELIMINARY DESIGNS, FEASIBILITY STUDY, DETAILED DESIGNS, SAFEGUARDS DOCUMENTS AND TENDER DOCUMENTS AND CONSTRUCTION SUPERVISION OF SECOND BARICHO – KAKUYUNI WATER PIPELINE AND TRANSMISSION PIPELINES TO KILIFI AND GANDA TANKS

LIST OF ATTENDANCE – Public Consultation Meetings and Key Stakeholders Interviews **DATE:** April , 2021

No.	Name	Organization/Designation	Email	Phone No	Signature
1.	NAPHTAL BIRYA	INTERIOR S.O.P.		0790571004	
2.	Pst. SAMSON A. WAMUNGA	BOM MEMBER-KAKUYUNI BOYS SEC.	samsonwamunga10@gmail.com	0720248614 0737039118	
3.	NIXON MRAMBA	MCA	–	0722820383	
4.	SAMUEL JETWA YAA	BOM MEMBER – KAKUYUNI BOYS SEC	Samuel.Jetwa2017@gmail.com	0723400180	
5.	KITHI ROBERT JOHNSON	DEPUTY PRINCIPAL KBSS	Kithirobert@gmail.com	0716647576	
6.	Eng. T. K. KENDAGOR	REGIONAL DIRECTOR-KERRA	timzz2000@yahoo.co.uk	0722946287	
7.	Eng. Nicholas KIBARO	Director RTPW	Kerongodirectorroads@gmail.	0723445006	
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JILORE LOCATION

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WATER AND SANITATION DEVELOPMENT PROJECT (WSDP)

CONSULTANCY SERVICES FOR PREPARATION OF PRELIMINARY DESIGNS, FEASIBILITY STUDY, DETAILED DESIGNS, SAFEGUARDS DOCUMENTS AND TENDER DOCUMENTS AND CONSTRUCTION SUPERVISION OF SECOND BARICHO – KAKUYUNI WATER PIPELINE AND TRANSMISSION PIPELINES TO KILIFI AND GANDA TANKS

LIST OF ATTENDANCE – Public Consultation Meetings and Key Stakeholders Interviews **DATE:** April , 2021

No.	Name	Organization/Designation	Email	Phone No	Signature
1.	CHARLES M. MULEWA	CHIEF	CMulewa62@gmail.c	0723532021	
2.	NELLY U. KATZCHA	ASST. CHIEF	Ukadzeha...@gmail.c	0720311180	
3.	MWAMURE MASHA	BALOZI KAKONEH,		0708347212	
4.	HINZANO P. KADZEHA	HEAD TEACHER-JILORE	hinzanoPonda2@gmail.com	0728944666	
5.	ULICE MTHENGO	W PWD		0713226014	
6.	AMOS KAHINDI MUKARE	ELDER		0714663219	
7.	JOHN N. CHEA	PWD	JohnCheo959@yahoo.com	0714227039	
8.	CHRISTINE P. MWAITHETHE	V/ENDER		0717615795	
9.	NICKSON K. MITSANZE	RELIGIOUS LEADER	mitsanzee@yahoo.com	0725639864	

No.	Name	Organization/Designation	Email	Phone No	Signature
10.	AUSTINE MWAMURE YAA	YOUTH REPRESENTATIVE/MPS OFFICE		0724362348	
11.	ALFRED KAHINDI	BALOZI		0721885784	
12.	ELIAS THOMA NDOLO	BALOZI		0768677846	
13.	PETER CHARO MAITHA	BALOZI		0717845944	
14.	LUCY JUMWA KAINGU	VIEL DER		0727513226	
15.	ANNET KATUNGA	VIELDER		0706089591	
16.	MONICA M MAITA	BALOZI		0725385951	
17.	LILIAN SIDI DYEKA	YOUTH REPRESENTATIVE		0114344923	
18.	ADISA KINGA KOMAKA	BALOZI		0708819610	
19.	PAULINE G. KADZOMBA	BALOZI		0720837827	
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23.					

KAKUYUNI

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WATER AND SANITATION DEVELOPMENT PROJECT (WSDP)

CONSULTANCY SERVICES FOR PREPARATION OF PRELIMINARY DESIGNS, FEASIBILITY STUDY, DETAILED DESIGNS, SAFEGUARDS DOCUMENTS AND TENDER DOCUMENTS AND CONSTRUCTION SUPERVISION OF SECOND BARICHO – KAKUYUNI WATER PIPELINE AND TRANSMISSION PIPELINES TO KILIFI AND GANDA TANKS

LIST OF ATTENDANCE – Public Consultation Meetings and Key Stakeholders Interviews **DATE:** April , 2021

No.	Name	Organization/Designation	Email	Phone No	Signature
1.	ALPHONCE KITSAO JEFWA	INTERIOR/ASST CHIEF		0723723682	
2.	FATUMA GARAMA MAZERU	INTERIOR/ASST. CHIEF		0703418518	
3.	BONDERA CHENGO THOYA	VILLAGE ELDER		0715751113	
4.	NELLY .K. MWENI	ELDER KKY.		0724596221	
5.	Priscilla Kabibi Kabindi			0714002346	
6.	Anne Safari			0742708559	
7.	SIMEON HALA KAISA			0715081553	
8.	PAUL KARISA CHARO	VILAGE		0724614034	
9.	BENJAMIN KARISA AMANI	VILLAGE ELDER		0721013446	

KAKUYUNI

No.	Name	Organization/Designation	Email	Phone No	Signature
24.	MASOUD ALI SAID	Ustadh-Al FAHMSCH	masoudali024@gmail.com	0720341107	
25.	ATHMAN FAKHILI	KAKUYUNI - RESIDENT	athmanfe@gmail.com	0713887400	
26.	ATHMANI MANGI	MZEE NYUMBA KUMI		0726364673	
27.	Rum yongo	KAKUYUNI- RESIDENTI	[illegible]	0725058915	
28.	COSMAS MRAMBA	MONGOTINI-		0716192715	
29.	SHALET CHARISA	MONGOTINI		0790503943	
30.	VINCENT F. CHARISA	MONGOTINI		0708459452	
31.	PAUL MWAWALI HARE	MONGOTINI		0728116466	
32.	FRANCIS KITSAO NZARO	KAKUYUNI RESID	francis kitsao nzaro @gmail-com	0705144258	
33.	FLEVAN MWARIA KAIAMA	KAKUYUNI BAWO	mflevan@gmail.	0725997285	
34.					
35.					
36.					

GANDA - LOCATION

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SARI CONSULTING LTD | SGAPI | gath

WATER AND SANITATION DEVELOPMENT PROJECT (WSDP)

CONSULTANCY SERVICES FOR PREPARATION OF PRELIMINARY DESIGNS, FEASIBILITY STUDY, DETAILED DESIGNS, SAFEGUARDS DOCUMENTS AND TENDER DOCUMENTS AND CONSTRUCTION SUPERVISION OF SECOND BARICHO – KAKUYUNI WATER PIPELINE AND TRANSMISSION PIPELINES TO KILIFI AND GANDA TANKS

LIST OF ATTENDANCE – GANDA **Public Consultation Meetings and Key Stakeholders Interviews** **DATE:** 7th April **, 2021**

No.	Name	Organization/Designation	Email	Phone No	Signature
1.	BARTHOLOMEW N. KITUNGA	INTERIOR SENIOR CHIEF	ngumbau kitunga @gmail.com.	0727954589	
2.	Omar Hassan Mzee	INTERIOR ASST. CHIEF - GANDA	omegoc@gmail.com	0727 643 520	
3.	Juma Mafuta Omar	ASST - CHIEF - MERE	jumaomarsuka@gmail.com	0725638266	
4.	Anne Nema Ziro	ASST. CHIEF - MCABATA	anne nema 74 @ gmail.com	0721 4200 66	
5.	Mohamed Suleiman Kasim			0727912556	
6.	George Chengo Kabatwa			0712156357	
7.	Rashid Kalu Kithi			0711839446	
8.	Mwinyi Feki Abdulrahman			0725691277	
9.	Salim Omar Mwandi			0717200	

No.	Name	Organization/Designation	Email	Phone No	Signature
10.	[illegible]	MERE		0773506296	
11.	[illegible]	MERE RESIDENT		0718379405	
12.	[illegible]	MERE		0714013709	
13.	[illegible]	CANAL	algamalagency@g	0720297182	
14.	[illegible]	MERE		0710244194	
15.	[illegible]	MERE		0795698346	
16.	[illegible]	MERE		0719554199	
17.	[illegible]	MERE		0729249167	
18.	[illegible]	MERE		0798777297	
19.	[illegible]	CANAL		0743619763	OMARI
20.	[illegible]	CANAL		0712156357	
21.	RASHIDI KALU.	CANAL		0711839446	RASHIDI
22.	[illegible]	MERE		0795725041	
23.	Salim Omari [illegible]	CANAL		0713200501	

GANDA SUB LOCATION

No.	Name	Organization/Designation	Email	Phone No	Signature
24.	SAID OMAR SAID	GANDA		0720297182	
25.	KARARU NGIRA	MERE		0705146922	
26.	JOSPHAT TEMO CHIKOLA	MERE		0710244194	
27.	RICHARD KARISA MITSANZE	NERE		0714013704	
28.	Abdulrehman Njema	MERE		0727566706	
29.	Kahindi Lawrence Kombe	Kasimbiji		0711616013	
30.	UASSOR HAMOUD	MERE		0721204138	
31.					
32.					
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34.					
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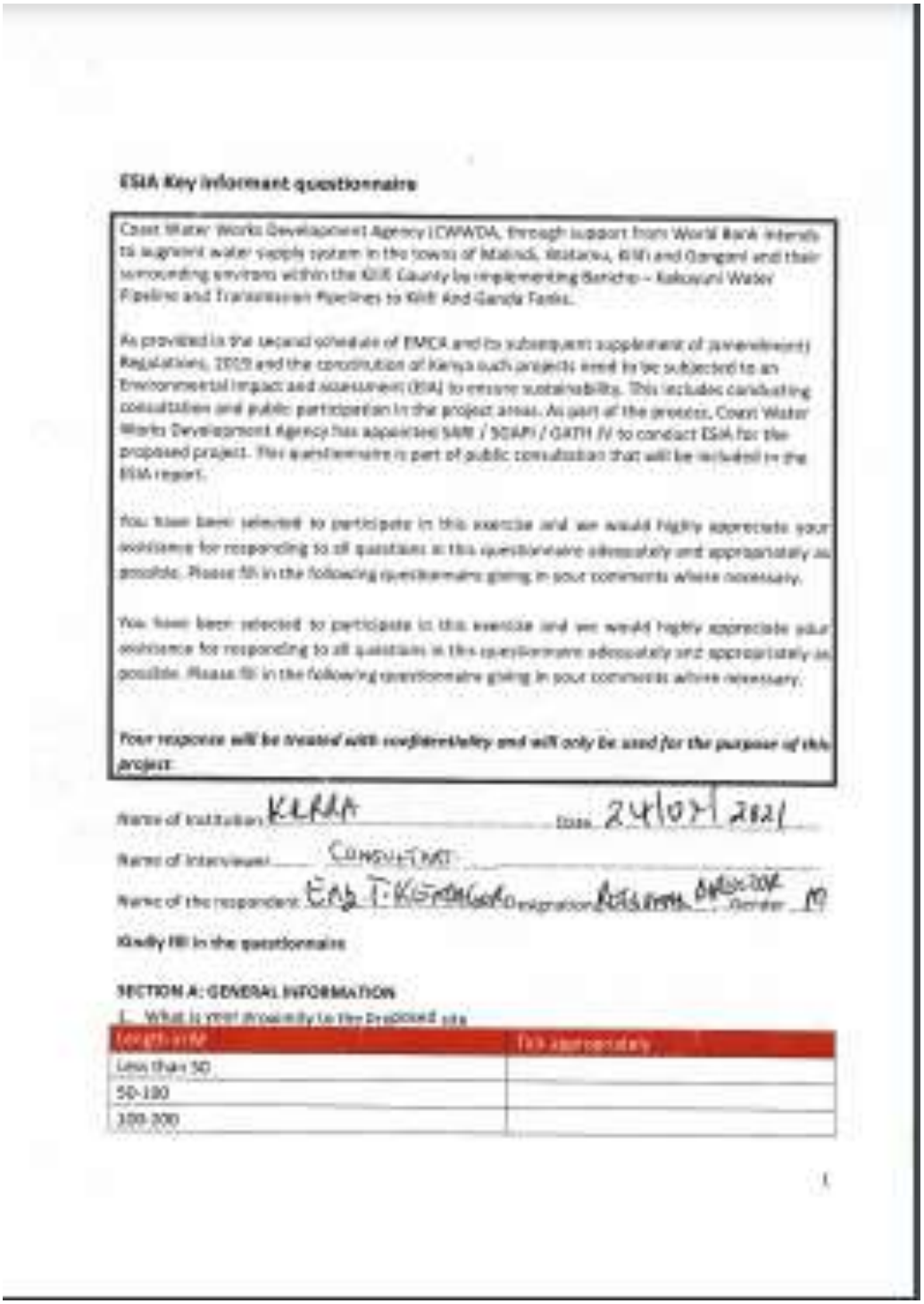
36.					

Appendix 3: Sample Questionnaires



ESIA Key informant questionnaire

Coast Water Works Development Agency (CWWDA), through support from World Bank intends to augment water supply system in the towns of Malindi, Watamu, Kilifi and Gongoni and their surrounding environs within the Kilifi County by implementing Baricho – Kakuyuni Water Pipeline and Transmission Pipelines to Kilifi And Ganda Tanks.

As provided in the second schedule of EMCA and its subsequent supplement of (amendment) Regulations, 2019 and the constitution of Kenya such projects need to be subjected to an Environmental Impact and assessment (EIA) to ensure sustainability. This includes conducting consultation and public participation in the project areas. As part of the process, Coast Water Works Development Agency has appointed SARI / SGAPI / GATH JV to conduct ESIA for the proposed project. This questionnaire is part of public consultation that will be included in the ESIA report.

You have been selected to participate in this exercise and we would highly appreciate your assistance for responding to all questions in this questionnaire adequately and appropriately as possible. Please fill in the following questionnaire giving in your comments where necessary.

You have been selected to participate in this exercise and we would highly appreciate your assistance for responding to all questions in this questionnaire adequately and appropriately as possible. Please fill in the following questionnaire giving in your comments where necessary.

Your response will be treated with confidentiality and will only be used for the purpose of this project.

Name of institution: KERRA Date: 24/07/2021

Name of interviewer: CONSULTANT

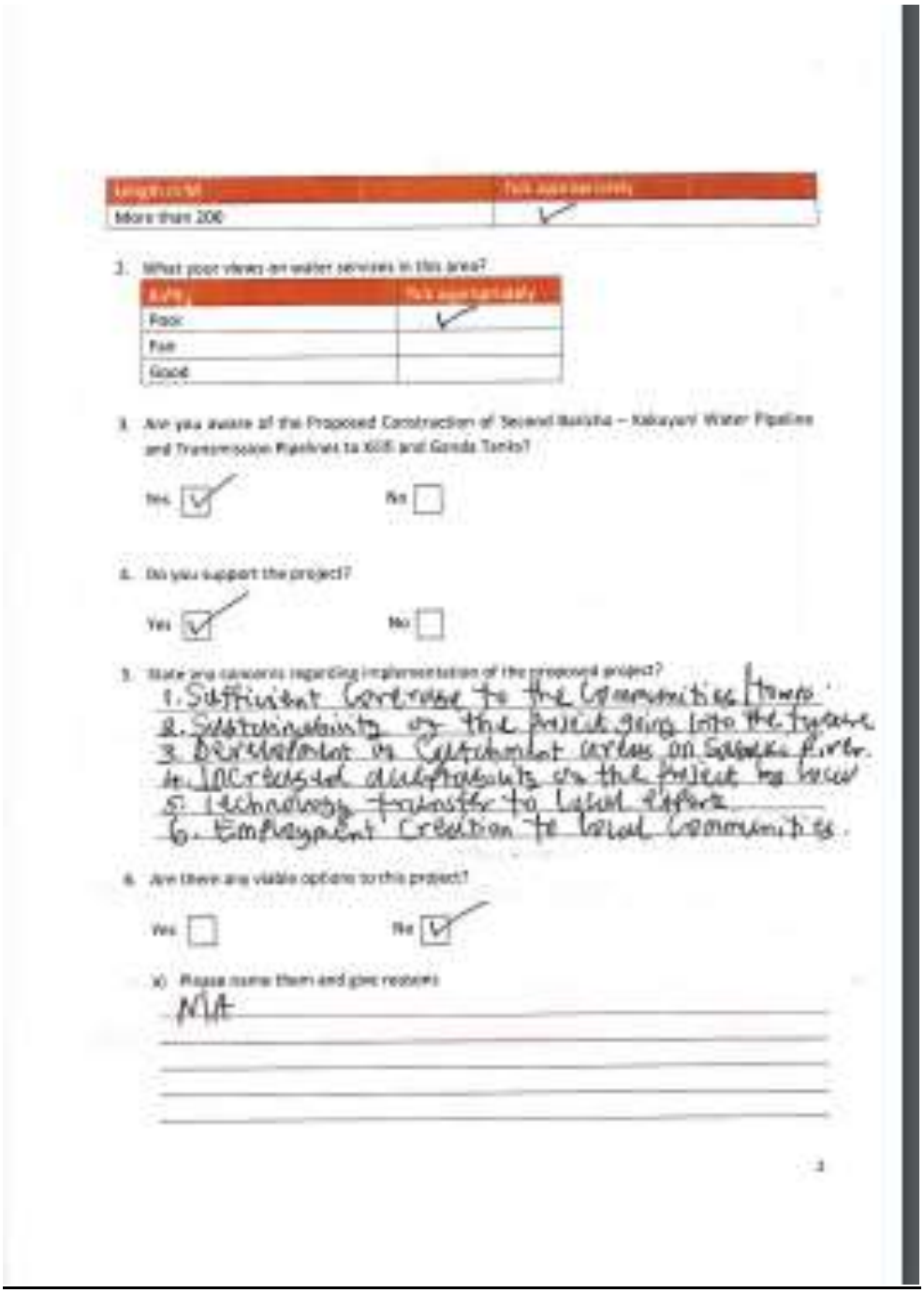
Name of the respondent: Eng. T. K[illegible] Designation: [illegible] Gender: M

Kindly fill in the questionnaire

SECTION A: GENERAL INFORMATION

1. What is your proximity to the Proposed site

Length in M	Tick appropriately
Less than 50	
50-100	
100-200	



[illegible]	[illegible]
More than 200	✓

2. What your views on water services in this area?

[illegible]	[illegible]
Poor	✓
Fair	
Good	

3. Are you aware of the Proposed Construction of Second Baricho – Kakuyuni Water Pipeline and Transmission Pipelines to Kilifi and Gonda Tanks?

Yes ☑ No ☐

4. Do you support the project?

Yes ☑ No ☐

5. State any concerns regarding implementation of the proposed project?

1. Sufficient coverage to the communities [illegible]
2. Sustainability of the project going into the future
3. Resettlement of Catchment areas on Sabaka River.
4. Increased disruptions on the project by locals
5. Technology transfer to local efforts
6. Employment creation to local communities.

6. Are there any viable options to this project?

Yes ☐ No ☑

a) Please name them and give reasons

Nil

SECTION B: ANTICIPATED IMPACTS

7. What are the expected **POSITIVE** impacts of the project from construction phase through to commissioning and operations phases?

1. Increased availability of portable water.
2. Increased economic activities
3. Improved sanitation and health standards.
4. Employment creation to locals.

8. What are the expected **NEGATIVE** impacts of the project from construction phase through to commissioning and operations phases?

1. Prevalence of diseases such as HIV/Aids
2. Environmental destructions/soil erosion etc.
3. Displacement of population along pipeline route
4. Disruption of services such as roads/power/water services
5. Culture change

9. What suggestions would you make to mitigate any adverse environmental impacts during the project construction, commissioning and operations?

1. Conduct public participation.
2. Create awareness to locals & institutions affected
3. Undertake a baseline study and suggest ways on mitigating on the adverse effects.
4. Planting of trees to ~~mitigat~~ mitigate on adverse environmental effects.

10. Please state the current environmental and social challenges in the project area?

1. Lack of basic amenities such as schools/health services
2. Low education levels
3. Low health standards
4. Low conservation efforts on environment

11. Any relevant observations, recommendations or comments on this project

1. Project is going to be very helpful to community
2. My wish is that the Project Starts and completes within time, last forth with Quality Standards
3. Another Praise to increase the Coverage of the Projects to most arrears in Kilifi County.

Signature: Tel No. 0722946287

Stamp:

DEPUTY DIRECTOR
Water Harvesting Authority
COAST REGION
(Mombasa & Kilifi)
P. O. Box 87447-80100
MOMBASA
P. O. Box 77-80201 KILIFI

Annex 7: Consultation Documentation from the Kakuyuni Boys High school

COAST WATER WORKS DEVELOPMENT AGENCY

Ref: CWWDA/S. B-K. P/454/VOL I/10
Date: 26th May, 2021

The Principal & Secretary to the Board of Management,
Kakuyuni Boys High School,
P. O. Box 5400 – 80200,
Malindi.

Dear Sir,

RE: LAND REQUEST FOR WATER RESERVOIR AT KAKYUNI BOYS' SECONDARY

Reference is made to your letter dated April 23rd, 2021 on the above subject matter.

CWWDA noted the issues raised therein and is ready to engage the School Management Board to deliberate further on the issues.

The purpose of this letter is therefore to inform the management of our availability on June 21st ,2021 at 10.00am.

Please confirm your availability on this date.

Yours faithfully,

MARTIN TSUMA
Ag.CHIEF EXECUTIVE OFFICER

Copy to:
Managing Director
Malindi Water and Sewerage Company;

P. O. Box 90417-80100
Mombasa Kenya

Tel: No. 041 - 2315230

Email: info@cwwda.co.ke
Website: www.cwwda.go.ke

KAKUYUNI BOYS SECONDARY SCHOOL

P.O. BOX 5400, MALINDI. 0722440343

Our ref.....KBSS..... Date: 4 /12 / 2021

The Chief Executive Officer,
Coast Water Works Development Agency,
Mikindani Street, Off Nkrumah Road,
Mombasa – KENYA.

Dear Sir,

RE: LAND ACQUISITION FOR CONSTRUCTION OF A WATER RESERVOIR AT KAKUYUNI BOYS HIGH SCHOOL

Reference is hereby made to your letter Ref. No. CWWDA/S. B-K. P/454/VOL I/10 dated 26th May 2021 and the Board of Management's meeting held on 21st June 2021.

Following the Board of Management's meeting, the school has accepted the proposed offer from CWWDA to construct a fully furnished modern library and in return the school gives its concurrence to the proposed construction works for a 5,000m^3 water reservoir within the school.

In view of the above, the school gives its no-objection to the proposed arrangement which is based on mutual benefit to the parties involved.

Yours faithfully,

PRINCIPAL
KAKUYUNI BOYS' SEC. SCH.
P. O. Box 5400-80200, MALINDI
Date 4/12/21 Sign.

KAINGU ALPHONCE
PRINCIPAL & SECRETARY TO THE BOM

Copy to:
Managing Director – Malindi Water and Sewerage Company;-